MAY | 1957

products finishing

FINISHES ON METAL PRODUCTS

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FIRE-SAFE FINISHING...

one of many developments of Sherwin-Williams Research to assure performance . . . at *both* ends of the line!

A water emulsion product finish to eliminate fire hazards during application . . . a catalyst-curing coating that dries by chemical action instead of oxidation . . . a dependable multicolor lacquer! These are but a few results of the great attention given to Sherwin-Williams Laboratory Research with one purpose in mind: trouble-free performance on your production line *and* on your product in use.

Need a fresh look at *your* product finish? If so, investigate Sherwin-Williams Laboratory Research. Because whether you make appliances, furniture, or any metal or wood product there's every chance Sherwin-Williams can make a practical contribution to your finish . . . to make it apply better and perform better. Contact your nearest Sherwin-Williams Representative for facts. Or write The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio. In Canada: 2875 Centre St., Montreal.

SHERWIN-WILLIAMS **INDUSTRIAL FINISHES**

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1	15	29	43	57	71	85	99	113	127	301	2nd Cover	337	351	365	379	393	407	421
2	16	30	44	58	72	86	100	114	128	302	3rd Cover	338	352	366	380	394	408	422
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4	18	32	46	60	74	88	102	116	130	304	315	326	340	354	368	382	396	410	424
5	19	33	47	61	75	89	103	117	131	305	316	327	341	355	369	383	397	411	425
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11	25	39	53	67	81	95	109	123	137	311	322	333	347	361	375	389	403	417	431
12	26	40	54	68	82	96	110	124	138	312	323	334	348	362	376	390	404	418	432
13	27	41	55	69	83	97	111	125	139	313	324	335	349	363	377	391	405	419	433
14	28	42	56	70	84	98	112	126	140	314	325	336	350	364	378	392	406	420	434

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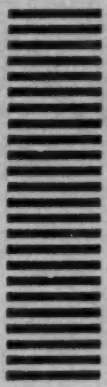

Your Monthly Source For Finishing Ideas

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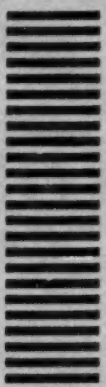


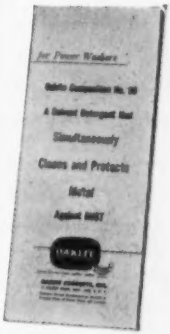
These Oakite shortcuts speed your metal cleaning

1. Cleaning and rustproofing
—in one washing operation.

Oakite Composition No. 98 (used cold or hot in one-stage or two-stage washing machines) quickly removes cutting oils and chips and leaves a thin film that protects steel against rusting between operations or during temporary storage.

Excellent for cleaning before inspection: the metal is cool for immediate handling and the film (too thin to affect measurements) prevents finger prints from corroding highly finished surfaces.

One auto manufacturer uses No. 98 in seven plants for cleaning and rustproofing brake cylinders, camshafts, connecting rods, crankshafts, cylinder heads, flywheels, push rods, tappets, wrist pins, etc.



2. Stripping pigmented paints
—with no need for pickling before repainting.

Oakite Rustripper saves money in paint shops by doing a complete stripping job in one operation. It eliminates extra pickling and neutralizing to remove the metallic pigments, phosphate coatings and rust that prevent successful repainting.

A television manufacturer says "We formerly took 25 minutes to strip rejected cabinets, then had to pickle to remove tarnished phosphate coatings. Today 10 minutes in Rustripper strips the same cabinet so bright and clean you can't tell it from new. Eliminates pickle, neutralize and rinses."

An auto parts maker uses Rustripper for continuous conveyor line stripping. "Cycle of 1 minute and 50 seconds works like a charm stripping paint and incidental rust from rejects and hooks."

FREE For full information write for booklets:

1. "*For Power Washers—Oakite Composition No. 98*" or
2. "*Here's the best shortcut in the field of organic finishing.*"

Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

OAKITE

Export Division
Cable Address: Oakite

Technical Service Representatives in Principal Cities of U.S. and Canada

For more data circle 304 on Reader Service Card

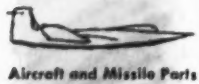
LOOK AT THESE ADVANTAGES OF

IRIDITE® FINISHES

for

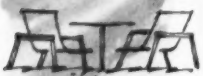
CORROSION-RESISTANCE, PAINT BASE ON ALUMINUM AND MAGNESIUM

TYPICAL APPLICATIONS



Aircraft and Missile Parts

Automobile Hardware



Outdoor Furniture

Communications Equipment

Marine Equipment

EASE OF USE—Iridite is a simple chromate conversion treatment. Fast, easy, economical. Dip, brush or spray it on at room temperature. No special equipment. No specially trained personnel.

OUTSTANDING PERFORMANCE—Integral film can't flake, chip or peel. Takes paint firmly on initial application, and the bond lasts. Even protects areas scratched in use.

LOWEST COST—You have only minimum equipment cost, no special racks, high speed operation, lower overall handling costs.

CHOICE OF APPEARANCE—Clear coatings that retain metallic lustre to dark, maximum protection coatings. Dyes available, too.

IRIDITE #14 and #14-2 (Al-Coat) for ALUMINUM—Both provide excellent corrosion protection and paint base. Iridite #14-2 is an improved product that allows greater flexibility in operation and coating thickness and produces the optimum in corrosion protection. Either coating provides corrosion resistance superior to complicated electrolytic treatments in a fraction of the time. These coatings also have low electrical resistance, aid in arc-welding, provide a good base for bonding compounds, have no effect on the dimensional stability of close-tolerance parts. Choice of appearances ranging from clear through yellow iridescence to full brown. Red, green, blue, orange or yellow dyes available.

IRIDITE #15 (Mag-Coat) for MAGNESIUM—Produces a protective, paint base film with corrosion resistance at least equal to long, high-temperature dichromate treatments in a fraction of the time and at room temperature. Appearance can be varied from light brown to dark brown and black.

APPROVED UNDER GOVERNMENT AND INDUSTRIAL SPECIFICATIONS

SEE FOR YOURSELF WHAT IRIDITE CAN DO . . . SEND SAMPLE PARTS FOR FREE PROCESSING. Also write for handy Reference File on Iridite chromate conversion coatings. Or, for immediate information, call your Allied Field Engineer. He's listed under "Plating Supplies" in your classified phone book.

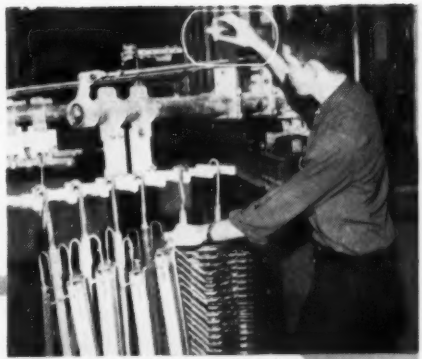
ALLIED RESEARCH PRODUCTS
INCORPORATED
4004-06 E. MONUMENT STREET • BALTIMORE 5, MD

Manufacturers of Iridite Finishes for Corrosion Protection and Paint Systems on Non-Ferrous Metals; ARP Plating Chemicals
West Coast Licensee—L. H. Butcher Co.

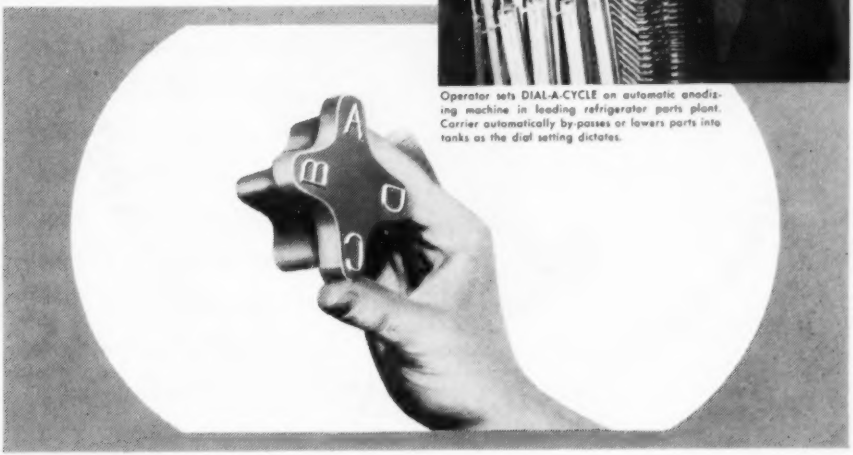
For more data circle 305 on Reader Service Card

Now

automate many different finishing operations simply in one ANODIZING or ELECTROPLATING machine!



Operator sets DIAL-A-CYCLE on automatic anodizing machine in loading refrigerator parts plant. Carrier automatically by-passes or lowers parts into tanks as the dial setting dictates.



just set a dial... H-VW-M DIAL-A-CYCLE does the rest!

If you anodize or electroplate a number of different parts, each requiring a different *treatment* . . . *finish* . . . or *color*—these many separate operations can be automated in one multiple-finish conveyor with H-VW-M's remarkable new DIAL-A-CYCLE.

HERE'S HOW IT OPERATES. As racked parts are loaded on each carrier arm, a dial on the carrier is set for the particular cycle the load is to go through. Automatic conveying does the rest, lowering parts into the proper tanks, by-passing others, according to the dial setting.

As simply as that, unusual savings are realized in production time . . . labor . . . capital investment. Like to know more? Write today for facts about how DIAL-A-CYCLE can go to work in your plant! **Hanson-Van Winkle-Munning Company, Matawan, New Jersey. Offices in principal cities.**

H-VW-M

Industry's Workshop for the Finest in Plating, Anodizing, and Polishing Processes • Equipment • Supplies

PLATEMANSHIP—Your H-VW-M combination—of the most modern testing and development laboratory—of over 80 years experience in every phase of plating and polishing—of a complete equipment, process and supply line for every need.

For more data circle **306** on Reader Service Card

Enthonics
AT WORK

Go from GRIME . . . to . . . SHINE . . . in SECONDS!

Use ENTHONE Emulsion Cleaner 75

DIP . . . . steel parts to be cleaned in Emulsion Cleaner 75 for only ***15 seconds.*** This simple immersion is done at room temperature (no heating facilities required) and with no irritation of the operator's nose, throat or skin.

RINSE . . . in plain water.

DONE . . . and done ***thoroughly*** . . . in seconds! All heavy oil films and solid dirt have been removed from every corner and crevice . . . from slots, tapped holes and sculptured patterns.

INSURE . . smooth, bright, adherent electrodeposits.

WRITE FOR FREE LITERATURE ON THIS SIMPLE, FAST, SAFE . . . AND ECONOMICAL . . . METHOD OF CLEANING METALS.

ENTHONE
INCORPORATED

442 Elm Street, New Haven 11, Connecticut
Representatives and Stock Points
Binghamton, N.Y.-Chicago-Cleveland-Dallas-Los Angeles

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products finishing

Vol. 21 No. 8 May, 1957

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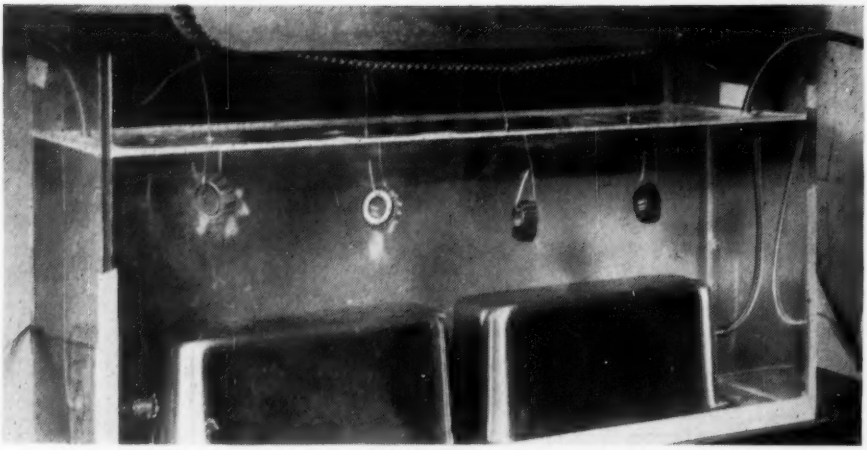

Largest Immersion Equipment for Ultrasonic Cleaning by GU

Lowest cost conveyorized automatic ultrasonic cleaning is now practical with these new General Ultrasonics D-52 immersion Sonicells. Each unit provides a full 52 square inches of radiating area, operating at 20,000 cycles for maximum effectiveness.

The improved, customer-tested, D-52 has all-welded stainless steel construction and an exclusive internal design that results in great ruggedness, high efficiency and long life. Groups of D-52's provide efficient and economical operation in tanks and vats of unlimited volume in all the usual cleaning solutions.

These Sonicells are powered in large installations by exclusive GU motor generators for maximum dependability. Smaller installations are powered by our Model 700 and Model 400 electronic generators designed for continuous operations. All controls are simple and easy to operate.

The increased power of these new units has proved highly successful for the most difficult and largest cleaning operations to remove dirt, buffing, grinding and lapping compounds and also to replace hand cleaning operations on blind surfaces.

For further information or demonstration call or write.

GU ***THE GENERAL ULTRASONICS COMPANY***

67 Mulberry Street • Hartford 3, Connecticut

THE ULTIMATE IN ULTRASONICS

For more data circle **308** on Reader Service Card

America looks to . . . Hammond

for

FINISHING and DEBURRING

"KNOW-HOW"

The experience gained in over 70 years of machinery building has provided us with a big bank of "Know How."

This knowledge is drawn upon and added to every day. Our business is to share it with you to bring down high finishing costs. Many users of Hammond Automatics have found more efficient means of finishing by drawing on our bank of "Know How."

The Rotary Automatic illustrated represents one of our many types and sizes of automatic finishing machines for either continuous rotation or indexing. The head and stand units shown are a part of a large "family" which range in type and size up to 20 HP.

SEND SAMPLES and we will show you how much you can speed up production and cut costs.

Hammond Machinery Builders INC.

1622 DOUGLAS AVE. • KALAMAZOO, MICH.

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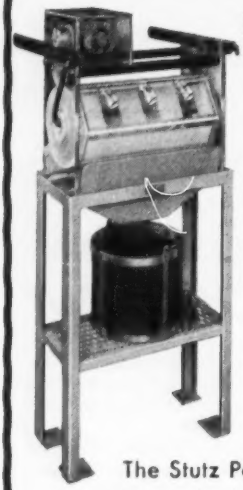
STUTZ



PORTABLE

PLATING

BARRELS

The Stutz Portable Barrel is made in 2 standard sizes with cylinders having inside dimensions of 6" x 12" and 8" x 18", I.D., and smaller upon application. Standard opening can be furnished as required.

★ Baskets in perforated metals or wire mesh.

★ Load/Unload Stand for convenient and fast handling of work load.

We invite your inquiries.

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4410 Carroll Ave., Chicago 24, Ill.

Serving Industry 35 Years

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Circulation over 20,000—largest in the finishing field

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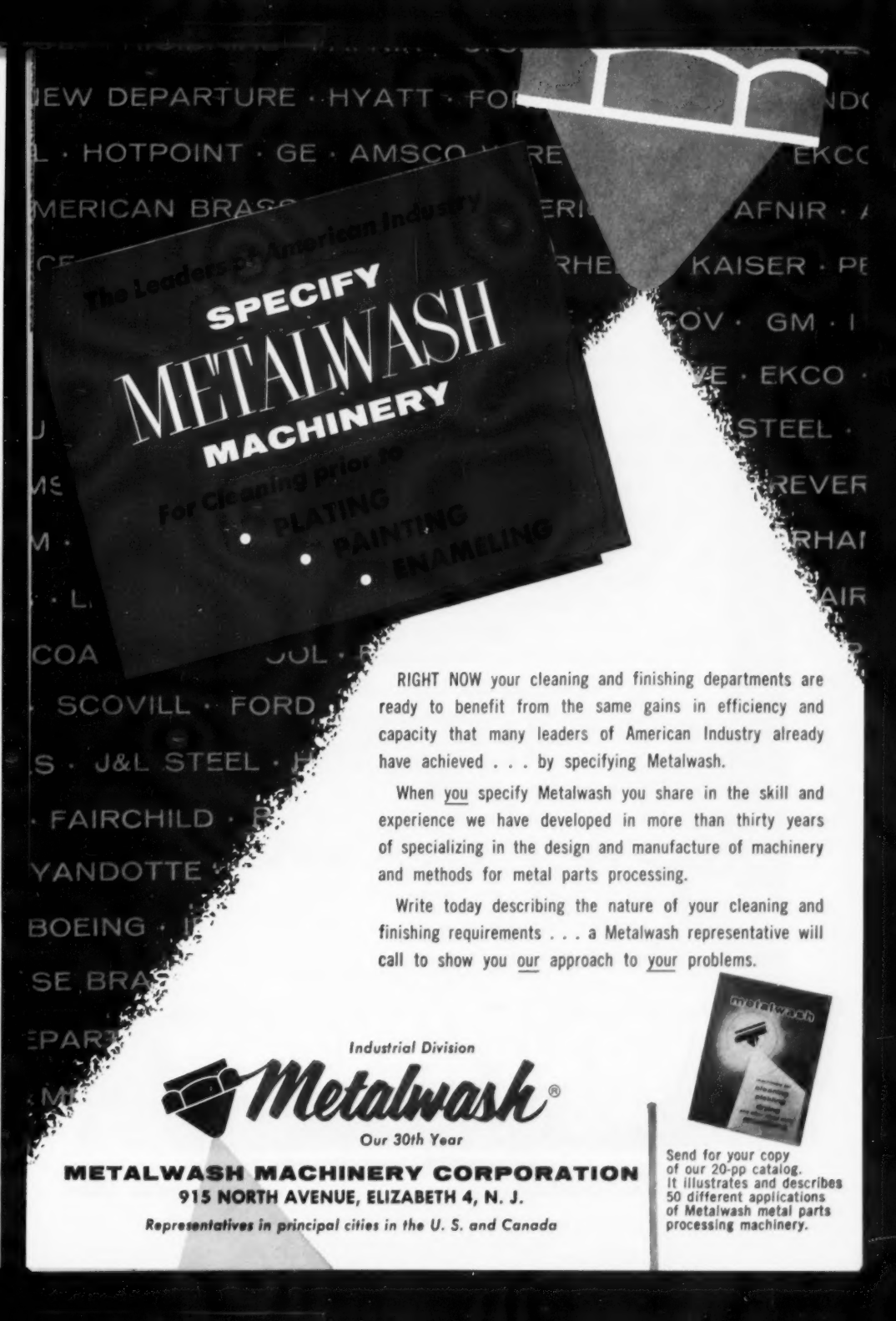

RIGHT NOW your cleaning and finishing departments are ready to benefit from the same gains in efficiency and capacity that many leaders of American Industry already have achieved . . . by specifying Metalwash.

When you specify Metalwash you share in the skill and experience we have developed in more than thirty years of specializing in the design and manufacture of machinery and methods for metal parts processing.

Write today describing the nature of your cleaning and finishing requirements . . . a Metalwash representative will call to show you our approach to your problems.

Send for your copy of our 20-pp catalog. It illustrates and describes 50 different applications of Metalwash metal parts processing machinery.

Industrial Division

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Our 30th Year

METALWASH MACHINERY CORPORATION

915 NORTH AVENUE, ELIZABETH 4, N. J.

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ISOPHTHALIC

based alkyd flats have outstanding viscosity properties

Another remarkable achievement with Oronite Isophthalic—alkyd flats exhibit exceptionally good viscosity let-down curves. High solids resins are easily manufactured and, when formulated in paints at low solids content, have desirable working viscosities.

Viscosities are obtained without jell structure so cooking problems are greatly reduced.

Other advantages of Isophthalic based alkyd flats include: fast dry, exceptionally low odor, excellent hold-out and scrub resistance, low cost and superior compatibility with odorless thinners.

Are you working with Isophthalic, the spectacular new raw material for the surface coatings industry? Contact your resin manufacturer or Oronite directly for complete information or suggested formulations.

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year after year, you get

BALANCED QUALITY*

in

MICCROSOL

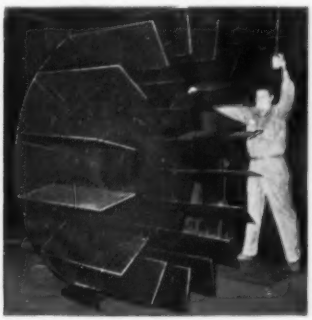
Developed originally as a coating for plating racks, Miccrosol E-1003 has all the desirable characteristics which make it an ideal coating for many other applications.

The chemical resistance of Miccrosol is unequalled in its field. Its toughness, abrasion resistance, resilience, and flexibility are unsurpassed. It's easy to apply in either a *dip* or *spray* formula. When necessary, it's easy to repair.

Year after year we build this quality into Miccrosol, improving it whenever possible and practicing every economy in its manufacture that does not compromise the excellence of the product.

This BALANCED QUALITY enables you to use Miccrosol *profitably* while assuring your customers of coating jobs that will prove superior in their performance.

**Outstanding performance and value*



MICCRO Products

Developed and manufactured by experienced platers and coaters

The above illustrations show Miccrosol being used as a coating. At the left, Miccrosol Spray S-2003 is being applied to a large plating tank. At the right, Miccrosol E-1003 has been applied by dipping this large paddle. Contact us for the name of the qualified Miccrosol coater nearest you.

It's Tops!

For tanks, ducts, and other equipment

MICHIGAN CHROME *and Chemical Company*

8615 GRINNELL AVENUE • DETROIT 13, MICHIGAN

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With Norton barrel-finishing abrasives and methods

Manufacturer Saved Over $90,000 First Year

A prominent aircraft parts manufacturing company reports the following savings — typical of very many — gained by shifting from hand-finishing to Norton TUMBLEX* abrasives and barrel-tumbling techniques:

Number of Parts	Cost of Hand-Finishing	Cost of Barrel-Finishing	SAVINGS
312,906	$.1149	$.0207	$29,475.75
30,724	.091	.013	2,692.42
25,599	.114	.014	2,559.90
25,685	.100	.012	2,260.28
9,347	.103	.020	770.50

Total savings for all parts — including many more made by this single company — amounted to well over $90,000 the first year and is increasing steadily.

This is just one example of the amazing economy forward-looking firms are

chalking up by converting to the know-how and materials Norton offers to all industry.

Your own metal parts can range from tiny needles to hefty forgings. They may be simple or complicated, hard metals or soft. Whatever they require, deburring, descaling or finishing to close tolerances — here's what you need to cut these operations to lowest cost.

Thorough knowledge of the right size, type and shape of tumbling abrasives to use, and just how to use them.

You can get these "Touch of Gold" advantages from Norton. Just send sample parts to our Sample Processing Department and you'll be forwarded finished parts with complete facts as to abrasives, methods and equipment. Or write for further information to NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors all around the world.

G-328

NORTON

ABRASIVES

Making better products... to make your products better

NORTON PRODUCTS:
Abrasives • Grinding Wheels • Grinding Machines
Refractories

BEHR-MANNING DIVISION:
Coated Abrasives • Sharpening Stones
Behr-cat Tapes

*Trade-Marks Reg. U. S. Pat. Off. and Foreign Countries

ALUNDUM* TUMBLEX "S". Bonded spheres that get into areas where other shapes can't reach. Exceptionally dense and long lasting. Five sizes.

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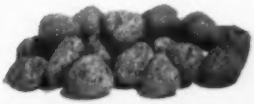

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editorial

Can Barrel Finishing Processes Help You?

The use of barrel finishing as a preparatory metal polishing process or as a post-plating or final finishing process is not new. H. Leroy Beaver, who has written over 100 articles on the subject for PRODUCTS FINISHING, reports that barrel finishing was used at Scovill Manufacturing Company as early as 1837.

Like other segments of the finishing industry, barrel finishing has made substantial progress. Improved methods, media, and equipment have been developed. These developments merit investigation or review as possible solutions to some of your finishing problems. Some of the many applications of the barrel finishing method were discussed in the articles, "Automated Barrel Finishing Systems Hold Tight Tolerances on Automotive Parts," and "Burr Removal By Barrel Finishing," published in the October, 1956, and March, 1957 issues of PRODUCTS FINISHING, respectively. A report of a recent investigation, "Effect of Media Size and Time Cycle on Barrel Finishing Results," appears on pages 40 to 46 of this issue.

These articles emphasize the truth of the statement that barrel finishing has been developed into a precision finishing tool, which can be employed to produce surface finishes accurate to relatively close tolerances. Further, developments in methods, media, and equipment have made it possible for most metals to be processed by barrel finishing. Automatic barrel finishing machines make it possible for parts to be processed continuously through the same barrel finishing cycle, or through a number of different cycles.

Thus, barrel finishing qualifies as a modern finishing method. Naturally it is subject to certain limitations, just as are all other finishing methods. The finishing engineer or production executive must keep these considerations in mind when he is evaluating the barrel finishing process.

However, time spent in investigating the possibilities of the barrel finishing method may yield substantial dividends.

Ezra A. Blount

—EDITOR

DESIGN METAL

IN THE EARLY 15TH CENTURY a Swiss artist by the name of Urs Graf made the first chemical engraving on iron. He applied a resist wax to the prepared iron surface and produced a design to be etched out by cutting the resist away with a sharp instrument. This principle of applying a resist to the metal surface to protect specific areas from the action of the chemical etchant is still followed today.

The Dutch have a name for it—"etzen"—meaning "to eat." Truly, a chemical etching is a chemical engraving wherein the metal is "eaten away" in predetermined areas by a chemical reaction.

There are many chemicals, or chemical combinations, that will etch metal surfaces, one particular metal responding most readily to a particular etchant or specific group of etchants. The etched pattern, or surface structure of the etch, produced upon a given metal is a characteristic of the chemical or combination of chemicals that are used for the etchant.

Design etching may be accomplished in three steps:

1. Application of "resist."
2. Cutting design in resist.
3. Chemically etching the design.

By R. E. PETTIT
Technical Advisor
Metal Industries
Dept.
The Diversey
Corp.

Commercial operations, as practiced today, have, for all practical purposes, eliminated step 2, above.

In special cases, where a single etched piece may be desired and equipment is not available, the metal can be coated with a wax and the design cut through the wax down to the metal surface.

Single or blended waxes may be used. A mixture of paraffin wax and beeswax is suitable. Other waxes such as ceresin or ozokerite may be used. The molten wax is applied to the part and, when it has solidified, the design is cut. A hand tool, or a pantograph with a number of cutters may be used.

However, such an operation will hardly fit into the requirements of

today's industry, unless the part in question is of such a shape as to preclude printing or silk screen methods.

Metal design etching is a specialized industry. The approach to a given design or end result is dependent upon a number of factors. The nature of the metal must be considered, the design and the permissible tolerance variations must be taken into account, and what is expected in respect to the service life of the product must be considered. If the job is to be multicolored, and an enamel fill or anodic treatment is to be used, what sequence of operation should be followed to achieve the end result?

Design etching on a production basis is more than applying a resist to a specific spot on a metal surface and subjecting the metal object to the action of an etchant. There are jobs that have specifications covering depth of etch as well as width of etch.

The metal surface to be etched must be clean and in good condition. It must be free from scratches, pits, slivers or other objectionable surface blemishes that will detract from the general appearance of the product. Etched metal goods, whether dials, nameplates, escutcheons or scales are considered precision units both as to finish and dimension.

Mechanical Finishing

Not only do the requirements of industry require numerous types and combinations of electrochemical, organic or chemical finishes, but specific types of mechanical finishes are used.

Generally the first operation, after the metal sheets have been cut to size, is mechanical finishing. Such operations may include polishing, buffing, satin finishing or belt sanding.

Chemical Finishing

Before applying the resist it may be advantageous to electroplate, anodically process, or subject the metal to a chemical etching to achieve the desired effect. The finish applied to the metal surface at this stage of the procedure, or the absence of a finish, should "as rolled" stock be used, is the finish that is generally seen on the raised or non-etched portions of the finished article.

Applying Resist

Lithographic printing is generally used as the means of applying the resist to the metal surface. Silk

screen printing may also be used, and for short runs may be advantageous. Whether offset printing or silk screen printing is involved, the end results are comparable. The difference lies in the mechanics of preparing the plane or surface printing press plate, or the silk screen. Comments here will be confined to the printing phase of the operation.

The design to be etched, including copy matter and finished dimension, is drawn in black and white. This oversized drawing is then photographed, reducing the image to the actual size of the finished plate. Cameras especially built for this type of work permit repeated exposures to be made with one negative, reproducing the image in uniform horizontal and vertical rows. Thus the negative may show 10, 20, possibly 50 impressions, all photographed from the one drawing by "step and repeat" photography.

A contact print using the developed negative is then made on a prepared metal sheet. The source of energy for this exposure is usually an arc lamp.

The light-exposed areas of the sensitized metal plate acquire an affinity for the printing ink, whereas the unexposed areas repel the ink as applied by the inking rolls of the press. This is known as lithographic printing in which the image and the unprinted area lie in the same plane. The difference between the printed and the unprinted area is chemical.

In the late 1700's this printing process was developed and named after the Greek word "lithos" meaning stone. For many years stone presented the only satisfactory surface for lithographic printing. Today metal plates are used. A Bavarian named Senefelder is credited with this development.

Lithographic ink is referred to in German as "umdruckfarbe,"—transferring ink. It is generally a mixture of printer's ink, India ink, soap, beeswax, animal fat and rosin. Suitable inks for lithographic printing are available on the open market.

Having applied the printing ink to the metal surface, the still wet ink is dusted with a powder. The loose, non-adhering powder is gently removed from unprinted areas by an air stream or a soft brush. A gentle heating of the printed sheet blends the powder retained on the ink into an impervious, acid resisting coating. Dusting powders are available on the open market. Some etchers prepare powder from a mixture of asphaltum, beeswax and rosin.

Etching

Etching of the printed and powdered sheet is the next operation. Design metal etching is more than just placing the printed sheet in a suitable fixture or basket and then placing these sheets in the etchant. Design etching requires skill and experience, and an understanding of the metals and alloys to be etched and the characteristics of the etchant being used.

If uniform etching is to be expected, the surface to be etched must be clean. The etchant should attack the metal uniformly and this attack must not be hindered by dirt

on the surface. Air agitation of the etchant is helpful under some conditions, and periodic, 180-degree turning of the work under treatment aids in securing uniformity of etch. After etching is completed, the metal sheets are rinsed, dried, and routed to the next operation.

Etching Solutions

The metal to be etched governs, to a degree, the selection of the etchant. "Iron acid" is a standard etchant that is widely used for metal work. "Iron acid" is a water solution of ferric chloride, acidified with muriatic acid.

In the literature,* and throughout industry there are numerous formulations for etching many metals. The etchants mentioned here for given metals, are not specifically recommended, but rather serve as a starting point in formulating an etchant.

Iron and plain steel etching may be accomplished with a water solution of nitric acid, or a solution of nitric acid, hydrochloric acid and ethyl alcohol in water. The latter solution may present some problems should the resist, such as a photographic resist, be soluble in alcohol. "Iron acid" may be used in the etching of iron or plain steel.

Stainless steels are much more difficult to etch than the common steels. Again, the most widely used etchant is "iron acid." "Iron acid" further acidified with nitric acid or hydrofluoric acid has also been used.

Copper and the copper alloys may be etched in nitric acid, but many commercial etchers prefer "iron acid" for these materials. Bronze, because of its chemical composition, may present some etching problems. Cases may arise wherein the bronze etching is started in an "iron acid." If necessary, after a sufficient depth of etch is obtained, the metal surface may be "rolled up" with additional resist, redusted

"This stuff will stick to almost anything."

*References:

1. *The Aluminum Industry, Volume II*— Edwards, Frary & Jeffries, Pages 469-470.

2. *Finishing Hand Book & Directory, 1954*, Pages 230-231, Sawell Publications, Ltd., London.

3. *Finishing Hand Book & Directory, 1953*, Pages 270-272, Sawell Publications Ltd., London.

4. *The Chemical Formulary, 1943, Volume VI* — H. Bennett, Pages 375-380, 176-177 and 202-203.

5. *Finishing of Aluminum*, Wernick & Pinner, Pages 148-149.

". . . silk screen inks containing dyes have been developed to make possible the formation of a full-tone multi-color effect with a single anodic coating."

and the etch continued in a strong nitric acid solution or a mixture of nitric acid and hydrochloric acid.

Since "iron acid" is widely used in commercial work for etching ferrous metals, copper and copper alloys, stainless steels, Monel, nickel silver and so on, a few words about this etchant may be of interest.

The etch "iron acid" is essentially ferric chloride in water solution in balance with hydrochloric acid and potassium chlorate.

This etchant may be made by dissolving an excess of clean scrap iron in muriatic acid until the reaction ceases. All the acid must be consumed and undissolved iron remains on the bottom of the container. The resultant pale green solution is ferrous chloride having a Baume' reading of approximately 40-42 degrees. The ferrous chloride is oxidized to the ferric state by adding sodium or potassium chlorate.

A ferrous chloride solution of approximately 28 deg. Baume', may be oxidized to the ferric state by adding ½ gallon of hydrochloric acid, specific gravity 1.18, and 10 ounces of sodium chlorate for each gallon of the ferrous chloride solution.

As the active ingredients of the "iron acid" etchant are consumed, or reduced to the ferrous condition (with the resulting formation of chloride salts of the metal being etched), additions of oxidizing agent or acid, or both, will be required. Eventually, the buildup of metallic salts requires a complete rejuvenation of the etchant. Metallics must be removed, the existing ferric chloride reduced and the etchant readjusted through addition of acid and chlorate.

Processing Aluminum

Etching aluminum and its alloys for two-tone work, or enamel fill work, is carried out in the same manner as other metals.

While "iron acid" is widely used for the ferrous and copper alloys, water solutions of muriatic acid may be employed in etching aluminum. The addition of sodium chloride to the acid etchant aids in developing smoother surfaces and etching uniformly. Certain metallic chlorides like cobalt or nickel accelerate the speed of reaction.

As the reaction is quite violent, and generates considerable heat, provisions for cooling the etchant are advisable. Excessive temperature of the etchant not only accelerates the rate of reaction, but damages the resist, causing it to lift.

The use of alkaline etching baths, with respect to decorative etching (not deep etching), are not used very much. Aluminum is satisfactorily etched in an alkaline solution, but because of the detrimental effect of the etchant upon the resist, acid etchants are preferred. Cold alkaline etchants are relatively slow in action, while the hot alkali etchants may cause resist breakdown. The effect of temperature upon the asphaltum base resist, or other resists of equivalent characteristics, applies to the etching of metals other than aluminum. Decorative or design

etching is carried out in solutions at room temperature.

However, there may be special occasions wherein another type of resist (other than the asphaltum base resists customarily employed) is desired, to permit aluminum etching in a warm, alkaline media.

An electroplate of a suitable metal may be applied to those aluminum areas that are not to be etched. Having served its purpose, the metal resist is removed by an acid—such as nitric—that will not attack aluminum.

In the manufacture of the full anodically processed plate, in contrast with anodically processed and enamel-filled plates, the operations are similar to those for other metals up to the point of etching.

The aluminum sheet, having been mechanically prepared, is anodically processed, printed, powder dusted and heated.

However, instead of etching to a fair degree of depth in muriatic acid as would be required for enamel fill work, the exposed anodic film is removed by chemical treatment in a water solution of hydrofluoric acid. These exposed areas are reprocessed in the desired anodic color and the resist removed. This is a one-color operation.

Each additional color requires an additional registered printing operation, dusting and burn-in.

The exposed areas are then "stripped" and re-anodized. Thus, for each anodic color produced on a multi-colored job, employing the resist in the proper area to protect the finished areas, additional printing, oxide coating removal, and anodic treatments are necessary.

To facilitate manufacturing operations silk screen inks containing dyes have been developed to make possible the formation of a full-tone multi-color effect with a single anodic coating. Half-tone effects, as well as full-tone designs, employing lithographic printing principles are also possible.

On the developed press plate there are two dissimilar areas: the image, which has an attraction for the oil-base ink and the background or unprinted areas which repel ink but retain water.

The problem involves the use of an oil-soluble dye; a dye that is compatible with the lithographic ink, one that does not affect the printing characteristics of the ink, one that is released by the ink when

"She's got better build and holdout than anything I've ever tried."

in contact with the unsealed anodic coating, and one that will not creep when absorbed by the oxide coating.

Commercial black offset ink can serve as a carrier for the dye. The introduction of the dye into the ink, because of the ink's heavy body, does require strenuous mechanical mixing. By heating the ink in the mixing bowl, and melting the dye under heat before adding it to the heated ink, the problem is simplified. The dye-carrying ink must be free from solid particles of the dye, and the dye must be uniformly dispersed throughout the ink.

Among the oil-soluble dyes that appear to be satisfactory for direct color printing upon the unsealed anodic coating are such materials as Blue BMA by National Aniline Company, Oil Red CY by Ciba Company, Fat Yellow SG by Ciba, and Calcophen Yellow by American Cyanamid, to mention a few.

It is possible to produce a desired color with dye mixtures; for example, an ink mixture of blue and yellow dyes will print green.

In each instance, the ink vehicle, carrying a suitable dye, is applied directly to the unsealed anodic coating, one color at a time through a screen or by a lithographic press plate. Each is designed for the particular color to be applied.

Having placed the dye-carrying inks in the proper areas of the design, the process plate is sealed and the vehicle-carrying ink removed. The penetration of the dye into the oxide coating from the vehicle is reasonably rapid, possibly completed within 30 minutes.

Colored anodically processed sheet can serve as a starting base. After printing and burning in the resist, the exposed colored anodic coating is removed by an acid treatment. The resulting plate surface presents an area of anodic color with a contrasting finish of natural aluminum.

Chemical bleaching of certain dyes, without damaging the oxide coating has been investigated and acid bleaches studied. However, this method of dye removal has not been wholly satisfactory.

For the time being at least there does not appear to be one universal bleach. In fact, certain dyes are quite resistant to acid solutions or mixtures compatible with the oxide coating.

Color effects through mechanical engraving offer promise. This procedure requires the removal of the original oxide coating, exposing the aluminum base metal. The engraved item is then re-anodized and dyed in a second color. Such an operation pre-supposes the resistance of the original colored oxide coating to the acid electrolyte and to the second dyeing operation.

Design etching with enamel fills or multi-color anodic work is an art. In this type of work, finish is the paramount consideration. Of course, the copy must be correct, the plate size within the specification tolerance, and other physical characteristics or factors within the prescribed limits.

In the final analysis it is the appearance of the article that differentiates between a quality job or just another chemically etched item. Surface blemishes, closed printing and ragged etching are factors that detract from the appearance of the

chemically etched metal product. Cleanliness, not only of the metal surface, but in the general plant area and in the handling of the merchandise is essential. Care in handling and rigid process control help in producing a high-quality product.

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Materials Handling in Paint Finishing

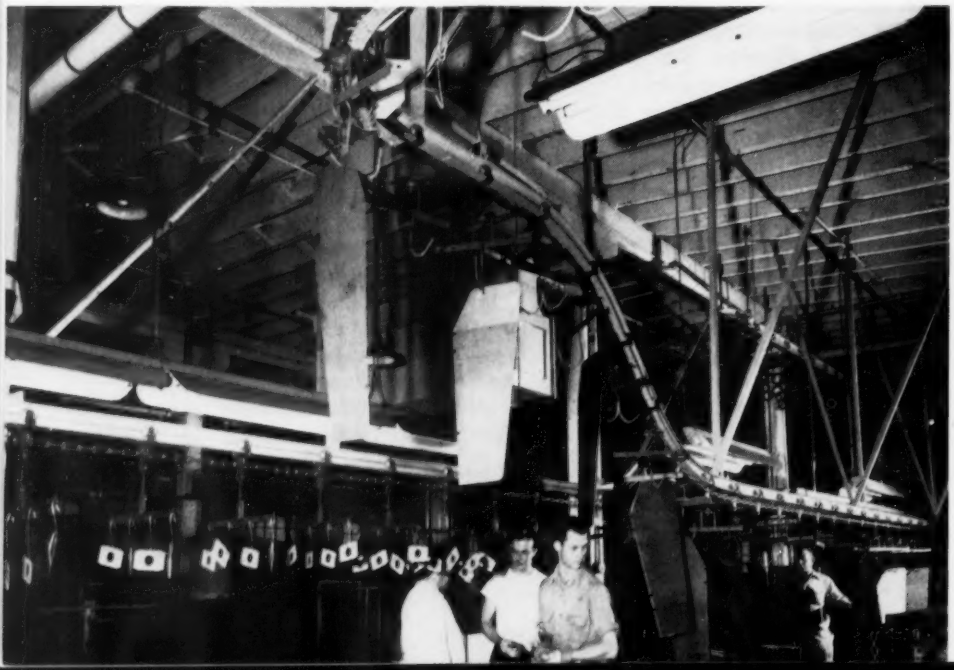
By JOHN C. SOMERS
President, Industrial Products Engineering Co.

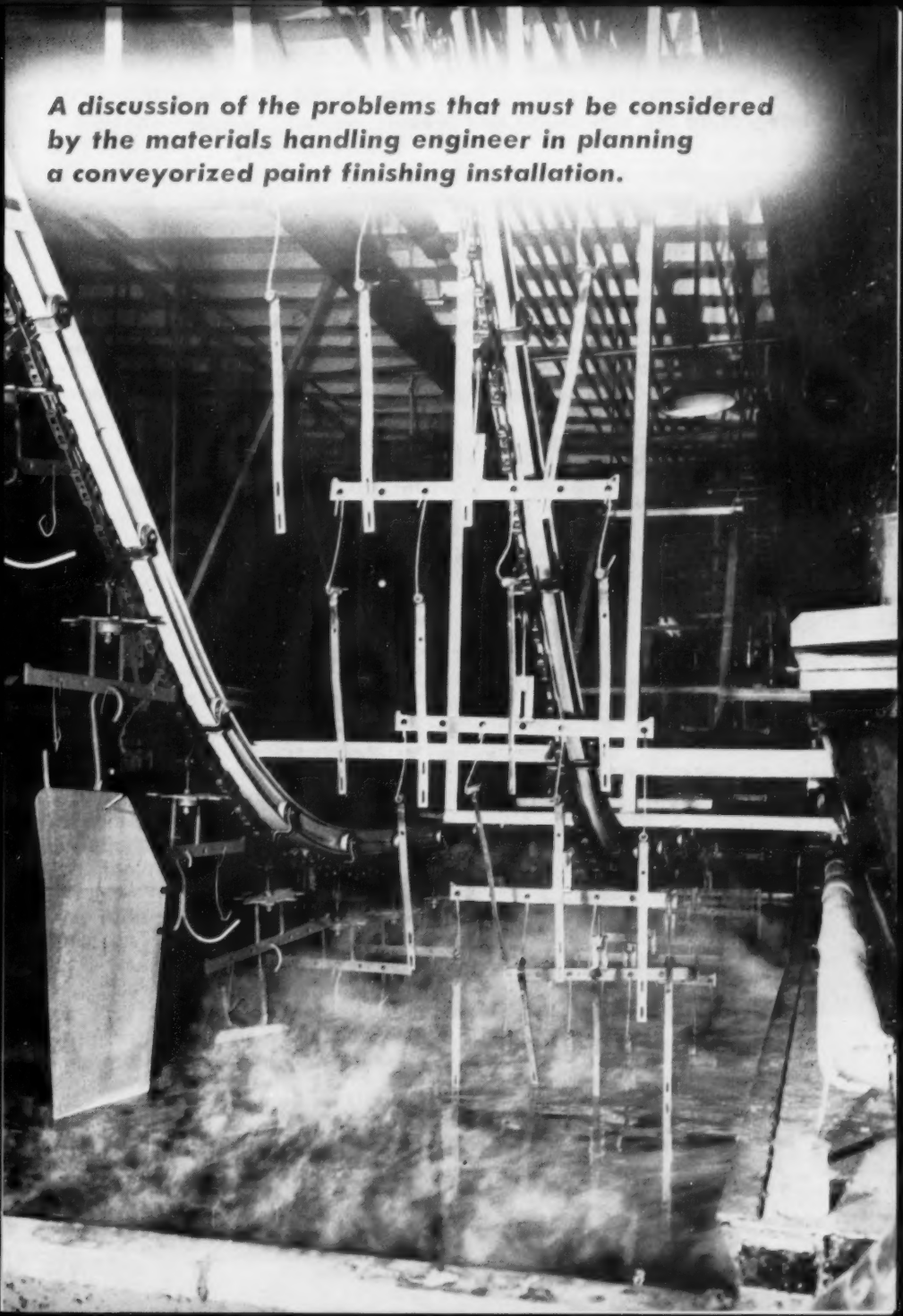
THE DEMAND FOR CONVEYORIZED FINISHING received much of its impetus during World War II, when the demand for finished products in a short time was so great. It was then that the concept of consolidating all related operations of finishing into one complete system became common. Such systems existed previously in automobile and

Fig. 2—Two conveyors carry parts for pin-setters through same series of cleaning and metal preparation processes. This view shows parts entering cleaning tank. Steam and fumes are exhausted with skimmer-type hoods which lead into main exhaust duct at right→

★ ★ ★

Fig. 1—Load and unload areas for conveyorized cleaning and painting of pin-setter parts in Yonkers plant of Otis Elevator Co. Men in center are loading and unloading paint dipping conveyor. Man on right handles parts for spray painting conveyor.





A discussion of the problems that must be considered by the materials handling engineer in planning a conveyorized paint finishing installation.

". . . the materials handling engineer is faced with the difficulty of integrating the equipment and process cycles . . in space allotted."

appliance plants, but even in these plants it was usually only the painting and baking operations that were conveyorized. In every installation where large quantities of parts must be handled, engineers now try to consolidate all related operations into one continuous system. Improvements in equipment for degreasing, washing, painting and conveying have helped to make this advance possible.

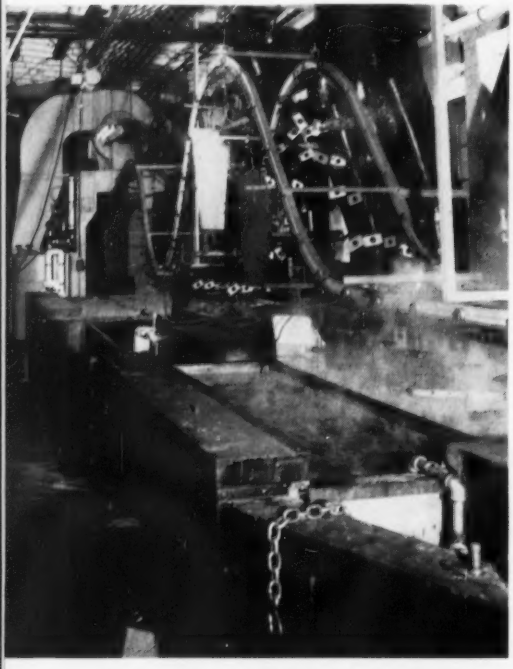


Fig. 3—Overall view of cleaning, rinsing, and blow-off installation. Cleaning tank is at right. At center, both conveyors arch up to carry parts through rinse tank. In background is blow-off tunnel in which parts are dried prior to painting. Cleaning installation includes facilities for overhead crane cleaning and rinsing of parts longer than 36 inches.

Much of the equipment and design of a conveyorized finishing installation must be special: it is for a single installation with special problems. Broadly speaking, the materials handling engineer is faced with the difficulty of integrating the equipment and process cycles of a finishing system in the space allotted.

Some of the equipment that a materials handling engineer must tie together with his conveyors is discussed briefly in the following paragraphs.

Washers

Washers are used to remove dirt, oil, solder, grit, flux and so on. If not removed, these films would interfere with the production of a high-quality finish. Inside the washer, nozzles spray the articles being cleaned with cleaning chemicals, water rinses, phosphate compounds, rust preventive chemicals and so on. Washers are of two general types: continuous conveyorized and rotating.

The principal problem for the engineer here is to fit the selected type of equipment into the system and to make sure that the conveyor speed will allow sufficient time in the washing machine to perform the necessary steps in the process.

Drying Equipment

When painting is performed immediately after the washing operation, it is necessary to have a dryer

or air blow-off to dry the parts before painting. Here again the problem is to place this equipment in the proper place so that it will allow enough time for parts to be dried and cooled before painting.

Degreasing Equipment

Degreasing is often a batch-type operation. Thus some method of removing the part from the transport conveyor, placing it in the degreaser, removing it and placing it back on the conveyor must be devised. Automatic tongs and grabs have been used for this purpose. Continuous degreasing is also becoming more common, so that the problem of integrating the degreaser into the system is again encountered.

Spray Booths

The method in which a product is to be handled dictates to some degree the type of spray booth that must be used. When parts are painted on hand trucks, a narrower booth can be used. The truck is moved in from the front of the booth, parts are painted, and the next truck is moved in. Here, the volume of overspray and solvents is smaller, so that a dry-type booth can be used.

Products being handled on continuous-overhead or belt-type conveyors, on the other hand, require a wider and longer booth, since they continue to move while being painted; time enough to cover the pieces on all sides must be allowed. Because of the volume of excess spray and other factors, a wet spray booth is often desirable. Where a turntable is used, the booth can be relatively narrow, with a limited volume of air to carry off fumes and overspray.

Dip Tanks

The most common method of dip-painting is to design a section of overhead conveyor so that it dips the parts in a tank of paint. Mesh conveyors, overhead hoists and hand dipping are also used. Factors that require attention in design are width, depth, type of entrance and type of exit. On a production system where a high-quality finish is required it is necessary to devise methods for removing "driplets"

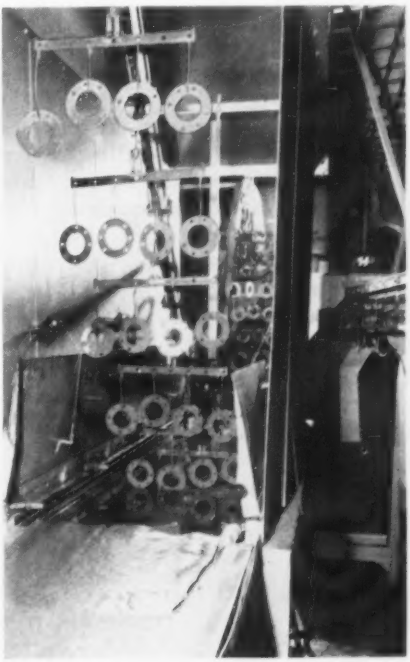


Fig. 4—Cleaned and dried parts are dip-painted in this tunnel-enclosed paint dip tank. As can be noted in right background of the photograph, the conveyors separate after leaving the blow-off tunnel. One of the conveyors is routed through the paint dip tank; the other one is routed through a paint spray booth where larger parts are sprayed.

"If carriers are designed properly, articles 1/4 by 1/4 inch can be painted along with others four by three feet."

and draining paint from recesses. This is often done by installing an automatic rotating device. It may also be done electrostatically or sometimes by tripping the parts over a wire.

Baking Ovens

Most baking ovens are conveyorized, gas-, electric-, or steam-heated, and use overhead or floor-type conveyors. Box ovens, using drag chains, portable racks, trucks and so on also have applications in finishing.

The most important factors in relation to materials handling when designing an oven are weight and type of material being applied. It is important to know what will be finished and how fast the conveyor should move so that the necessary heating capacity and ventilation can be installed.

Conveyor Hangers or Carriers

Having a hanger or carrier of the proper design for the articles being carried may determine the success or failure of a system. Many occasions have arisen when plans for a conveyorized finishing system have been abandoned because of the problems created by hangers, supports and carriers. If carriers are designed properly, articles 1/4 by 1/4 inch can be painted along with others four by three feet.

Typical Examples

The following examples are cited to show some of the problems encountered in design and layout of a finishing system.

Painting Parts for a Special Machine

A company received a contract for a large number of assembled machines. Each machine consisted of approximately 700 parts. Of these, 450 had to be painted, some completely, others only partially. The parts varied in size from one inch long to six feet long. Many of them were machined parts, coated with machine oil and grease. Others were from storage, and would be somewhat rusty. Naturally, the rust and grease had to be removed before painting.

The first step in designing a conveyorized system to handle these parts was to analyze them statistically: what size was the most common? Approximately 95 per cent of the parts were found to be 30 inches or shorter and all of them were light in weight. A dip-type washer could handle them easily. Thus the problem narrowed down to designing a system to process the 30-inch parts.

The parts 30 inches and shorter were divided into two categories: parts that would be spray painted and those that were suitable for dip-painting. Sixty per cent of the parts lent themselves to dip-painting. The cycle used was as follows: clean in a tank that contained a solution for removing rust and grease; rinse in a tank of hot water; blow-off with hot air to remove moisture; paint (dip or spray); and bake.

The load and unload portions of the conveyor were arranged to give

ample room for work, as well as room for skids of parts, racks for hangers, platform trucks, and aisle space.

Both conveyors (one for parts to be dip-painted and one for parts to be sprayed) went through the cleaning and rinsing tanks. Then the conveyors parted, one going through the spray booth and the other through the dip tank. They then again paralleled each other as they moved through the drying oven and to the unload area.

The spray booth had a "spinner" arrangement that caused parts to rotate automatically as they went through the booth. This gear rack was retractable for parts not suitable for automatic rotation.

What about the other five per cent of the parts that had to be painted? These parts were cleaned and rinsed on a separate overhead monorail conveyor that ran through an "extra" section of the cleaning and rinsing tanks, put there especially to accommodate these parts. They were then removed from the conveyor and placed on hand trucks to dry. When dry, they were wheeled into the spray booth to be painted. After painting, the parts were returned to the platform truck and

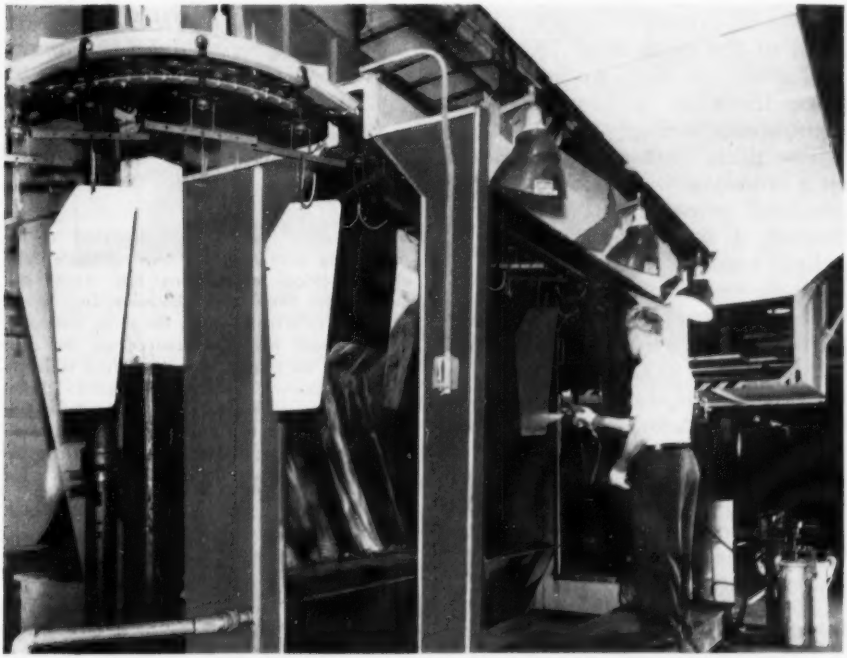


Fig. 5—Parts which do not lend themselves readily to dip painting are spray painted in the water wash spray booth shown above as they pass through on the transport conveyor. (Photographs courtesy Industrial Products Engineering Co., Long Island City 1, N. Y.)

sent to the drying room immediately.

Castings

A producer of castings wished to increase production. The castings produced by the company were pump parts. They varied from six to 60 inches in diameter and in weight from 10 to 185 pounds. All castings had to be painted.

The castings did not require rust removal or degreasing. The objective was to paint them as quickly as possible.

Weight analysis divided the castings into two groups: crane-weight parts and conveyor-weight parts. Most of the parts were 75 pounds or lighter, so that workers could place them on a 75-pound-maximum-weight trolley.

The parts that could be placed on a conveyor were handled by an overhead conveyor. It took them through a spray booth and to an unload area.

Crane-weight parts weighed between 100 and 185 pounds. These parts were brought to the painting area in box skids containing as many as 20 of the large parts. An overhead hoist and automatic tong were used to remove the parts semi-automatically from the skids. It placed the parts on pallets, which travelled on a roller conveyor through the spray booth and to the unload area.

Conclusion

The materials handling engineer needs certain basic information to plan any finishing system. This includes the following:

1. Number, size and weight of parts to be processed.
2. Specific operations that must be performed (washing, drying, painting, and so on).
3. Data on functions and engineering of finishing equipment in the system.
4. Horizontal and vertical space available for the installation.
5. Information on possible new products, spare parts, new designs and other parts that may be run in the system.
6. Regulations concerning fire, insurance, labor and other local agencies.

—*Adapted for publication in PRODUCTS FINISHING from a paper given by John C. Somers at the 77th Annual Meeting, The American Society of Mechanical Engineers.*

★ ★ ★

A mechanical method of applying a tin coating to aluminum for making more reliable electrical connections has been announced by The Eraser Company, Inc., Syracuse, N. Y. After a high tin alloy (containing no lead) has been placed on the aluminum to be tinned, the aluminum is heated from below. Then, as the melted tin is brushed on, the oxide is removed from the surface and the tin alloy amalgamates with the aluminum. A special type of brush is required. No flux should be used.—From "Tin News," March, 1957.

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For the person who "has everything"—a platinum mechanical pencil is now being marketed with the price tag of $500. If you find this too expensive, it is possible to purchase a similar pencil made of palladium, one of the platinum group metals, for a mere $250.

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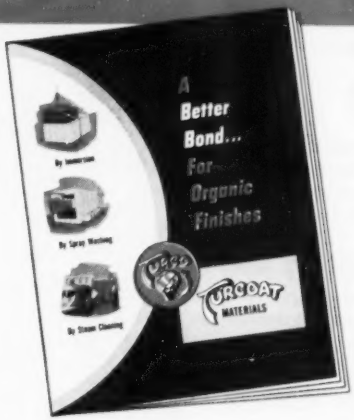

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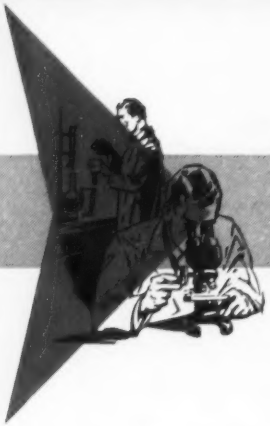

finishing clinic

Suggested solutions to problems submitted by readers. Send your problem to our Editorial Staff. There is no charge.

Preparing Steel for Painting

Question: *We are a small company with limited facilities and would like your advice for cleaning sheet steel parts after spinning operations. We plan to install one or two dip tanks. We have been using a cold mineral spirits for cleaning. Our main aim is to obtain a surface which will provide good paint adherence in the most economical way.*

Any suggestions you have will be appreciated.

R. B.

Answer: There are a number of processes which you could use to obtain a clean surface upon which you would secure good paint adherence. The one you select will be a compromise between the degree of quality which you require and the limitations on cost which you must hold.

There is, for example, a three-tank system which you could use. The first tank is a combined cleaner and phosphate coating material. The second and third tanks contain rinse solutions. These solutions are operated hot. This system cleans the surface and leaves it with a thin phosphate film which will benefit paint adherence.

For thorough corrosion protection and the ultimate in paint adherence, a five-stage or five-tank process, such as that used to prepare automobile bodies for painting, could be installed.

More specific suggestions as to the proper process, materials and equipment for you can be obtained from sales representatives of the several companies supplying cleaners and phosphate coatings to whom we are referring you.

★ ★ ★

Finishing Die Castings

Question: *We are planning to use zinc aluminum for castings on some of our work. We would like to have information on tumbling and plating of this metal.*

H. J. F.

Answer: We are referring you to companies from whom you can secure information on barrel finishing of die castings. Also, we are listing companies to be contacted with regard to plating zinc-base die castings.

★ ★ ★

Plating on Aluminum

Question: *We are anxious to obtain the names of companies who can furnish information on methods of plating bright nickel and chromium on aluminum.*

G. W. C.

Answer: We are referring you to several companies from whom you will be able to secure the information desired.

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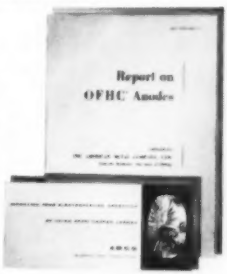

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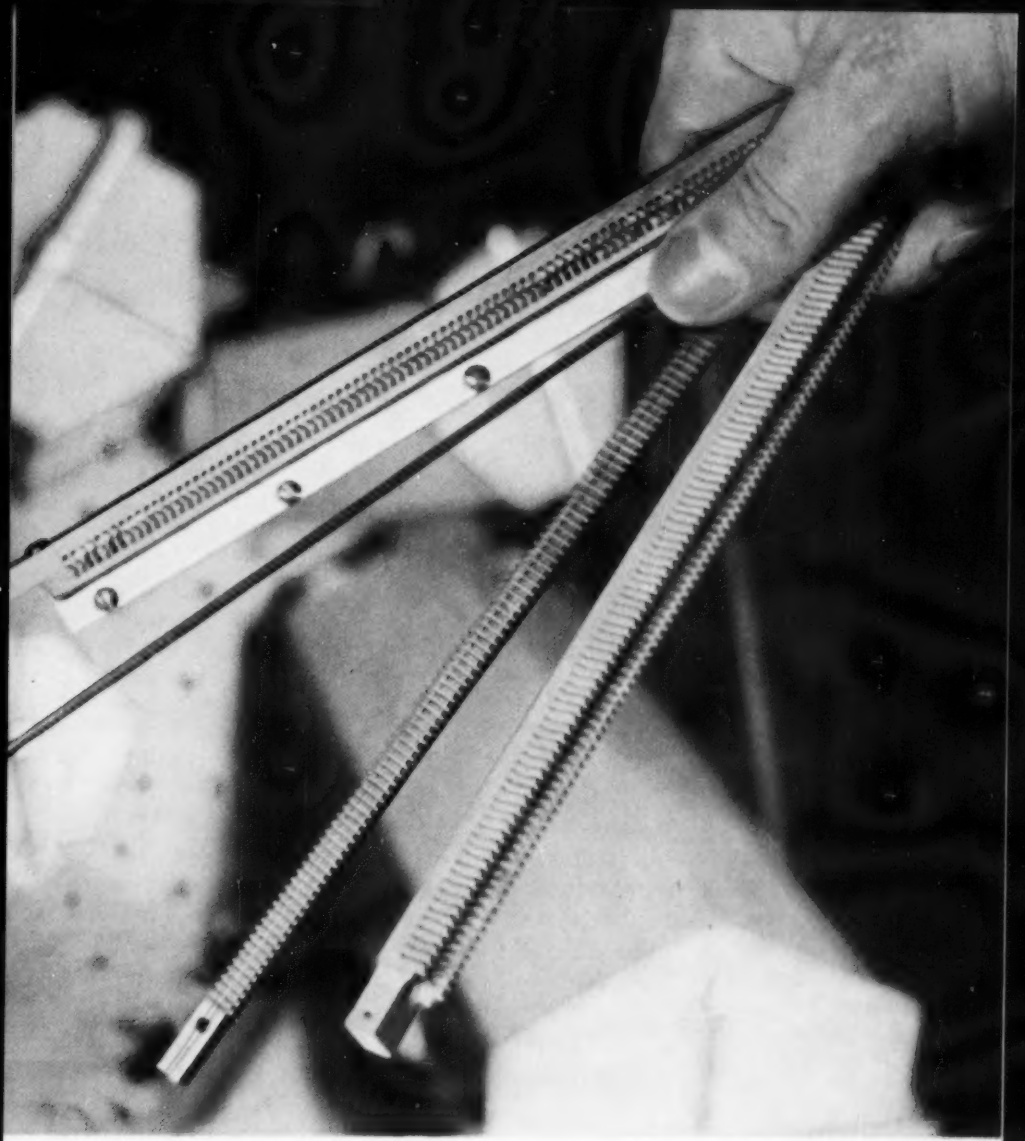

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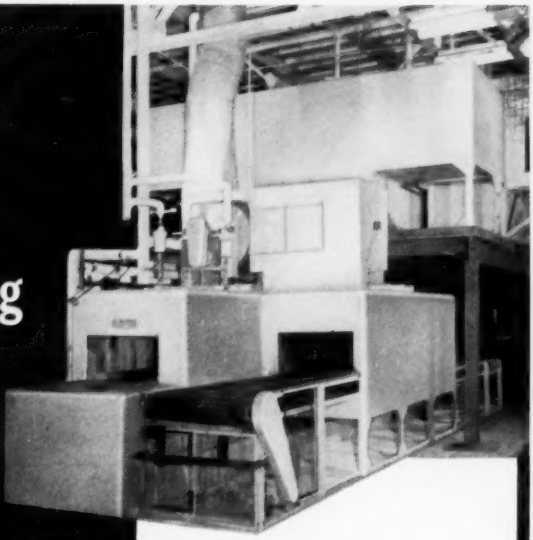

Compact side-by-side design of belt conveyor type Wash, Rinse & Hot Air Blow-Off Machine saves 40 sq. ft., permits inclusion of 12′ of cooling, and makes 1-man operation possible, since load and unload are at same end. Note how phosphatizing machine is mounted above for 7′6″ headroom, with its blow-off section overhung to save platform cost.

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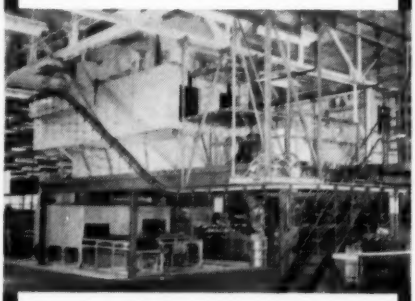

"U" shaped Five-Stage Phosphatizing Unit plus oven actually forms "S" shape, clears area below.

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Precision Castings Company Installs High-Speed Finishing Facilities

PRECISION CASTINGS COMPANY, a Division of Harsco Corp., Syracuse, N. Y., has recently installed a series of integrated automatic finishing departments. The new finishing facilities include automatic equipment for polishing, cleaning, copper-nickel-chromium or brass plating, phosphate coating, electrostatic spray painting and infrared baking.

Photographs on the following pages show the outstanding features of this new installation.

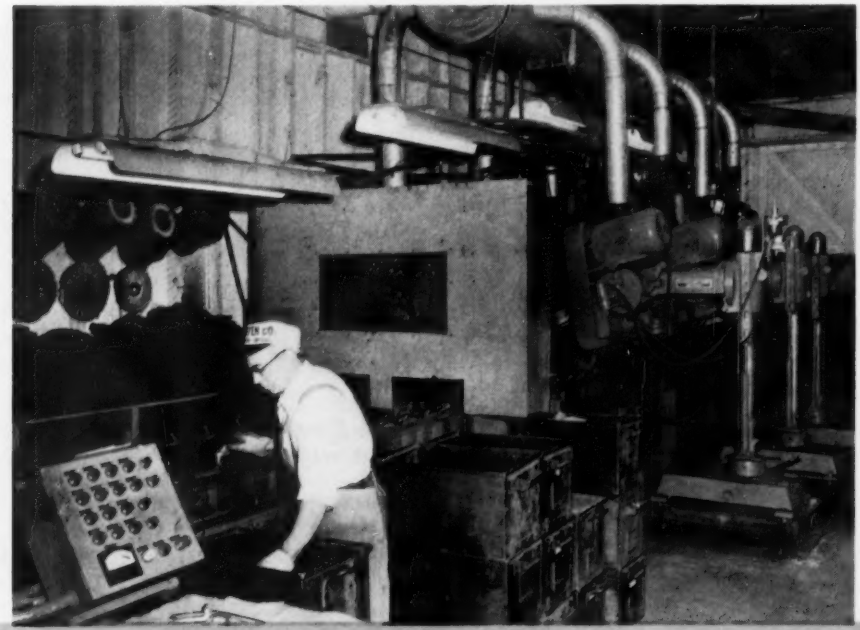
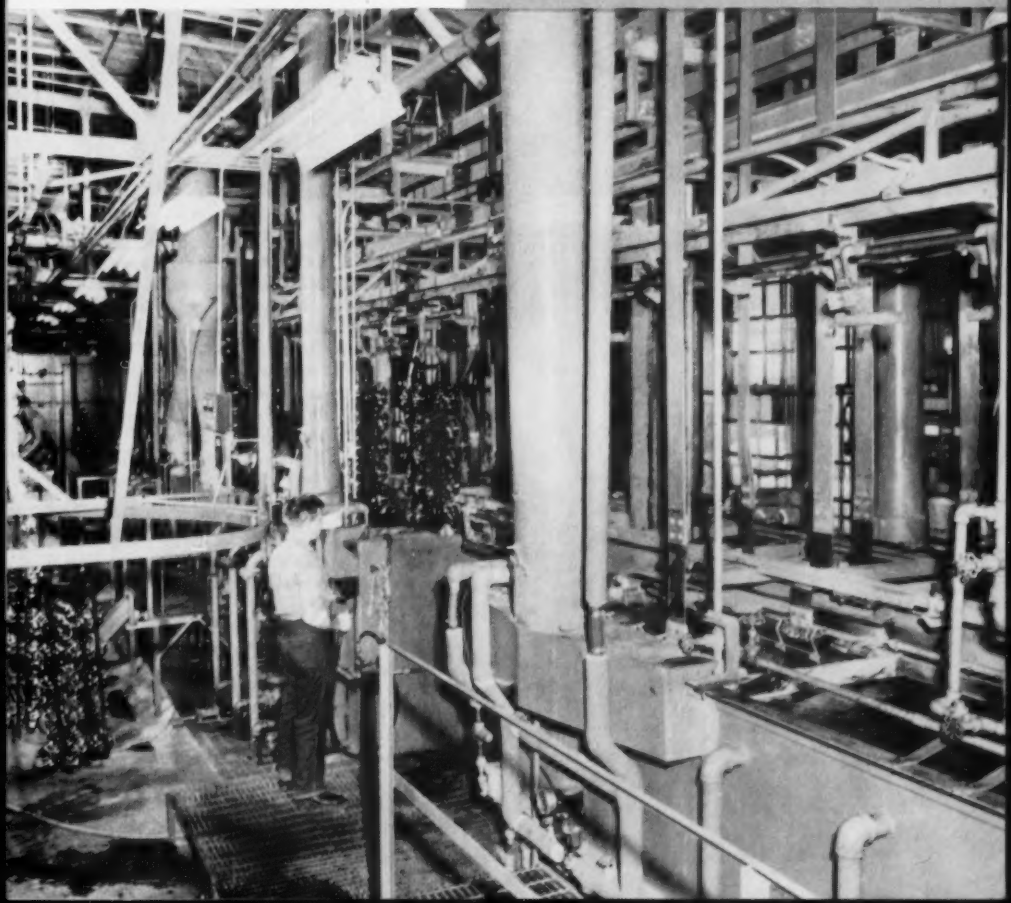


Fig. 1—Murray-Way automatic buffing installation is designed to handle parts of varied shape and size. Buffing compound is applied automatically. Each buffing machine buffs a specific area on part as it moves around the track. Machine flops parts over to ensure complete coverage. Operator controls the equipment from a pushbutton panel, places parts on moving fixtures and removes them when buffing is completed.

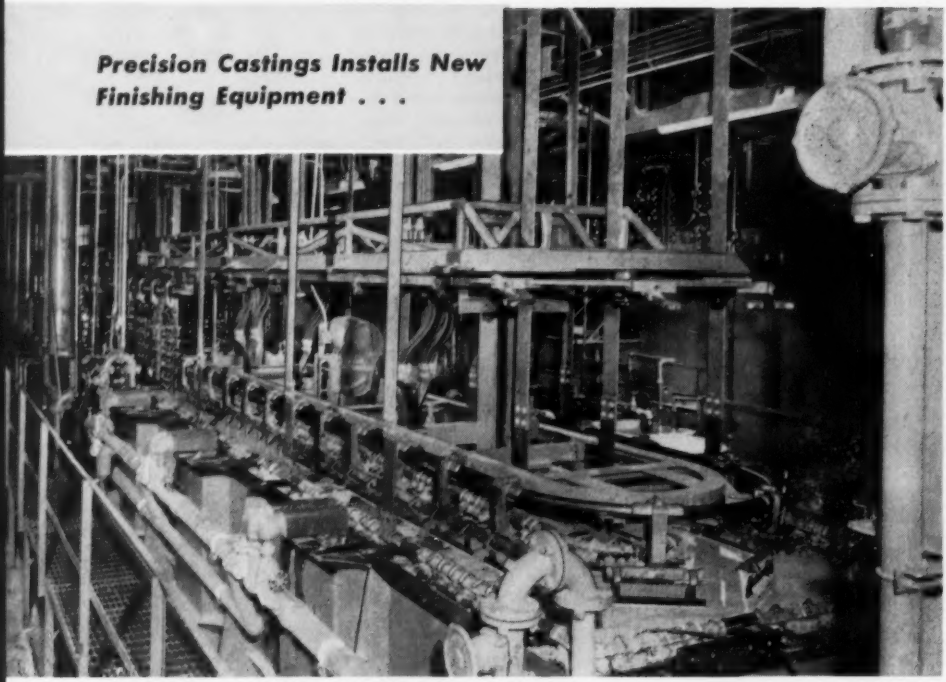
Fig. 2—Fully automatic 44-foot washing machine installed by Metalwash Machinery Corporation cleans parts, applies phosphate coating (controlled at 200 mg./sq. ft.). If trouble occurs in machine, it shuts down automatically, rings for foreman. Lights on machine tell him exactly where trouble is.

★ ★ ★

Fig. 3—Udylite automatic plating machine can handle die castings from one square inch in size up to 14 by 36 inches. Conveyor speed can be varied to accommodate up to 140 racks per hour. Machine is flexible enough to meet any copper-nickel-chrome or copper-nickel-bright brass finish requirement. One man is able to control the entire layout.



Precision Castings Installs New Finishing Equipment . . .



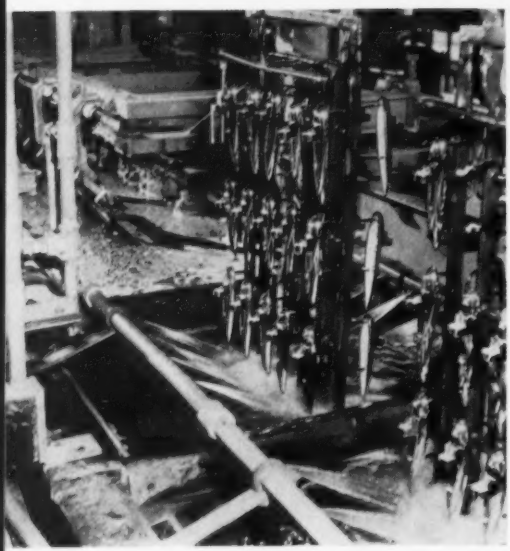


Fig. 4—Another view of automatic plating machine. Parts on racks in foreground are submerged in nickel solution, while those in background are elevated during transfer to next tanks. A special feature permits racks to be removed after nickel plating (before chrome) for transfer to bright brass plating line. Pushbutton-controlled rack storage area gets empty plating racks out of way fast. Plastisol rack coatings of different colors identify the type of material being plated.

★ ★ ★

Fig. 5—Closeup of pressure spray rinse station on the automatic copper, nickel, and chromium plating machine. Rack of parts for automobile fender mirrors in foreground has just emerged from nickel plating tank (background). Nickel solution is rinsed off bright-nickel-plated die castings by immersion in the two rinse tanks shown, and also by pressure sprays of clean water. Following water rinsing and activation cycles, nickel plated die castings are chromium plated.

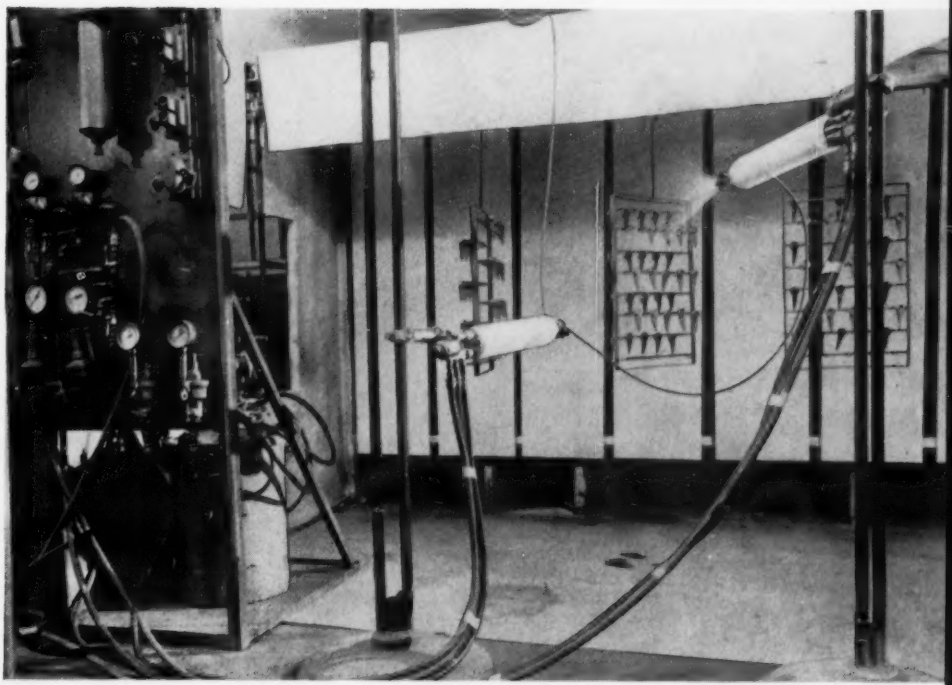


Fig. 6—Electrostatic spray painting installation is one of few being used successfully to apply wrinkle finishes and metallic paints. System can turn out 1,000 parts per hour. Power pack for installation supplies 150 kilovolts (peak) at a maximum of one and one-half milliamperes of current. Booth is 12 by 14 feet, can accommodate up to 12 spray guns, though only two are used normally. Guns and other equipment were made by Scientific Electric, Garfield, New Jersey.

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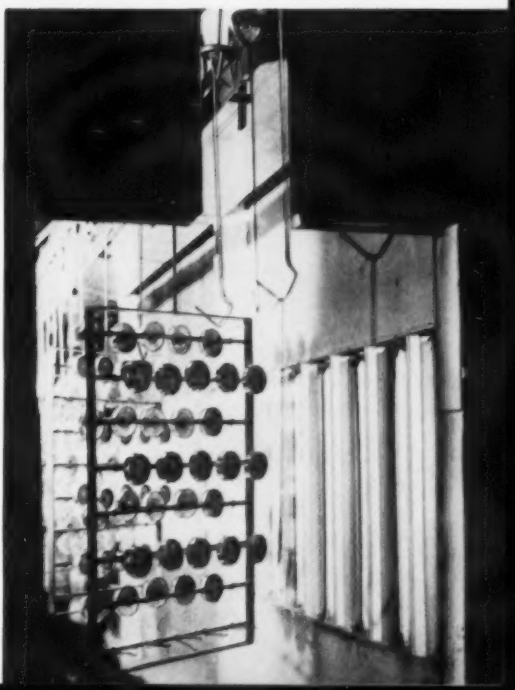
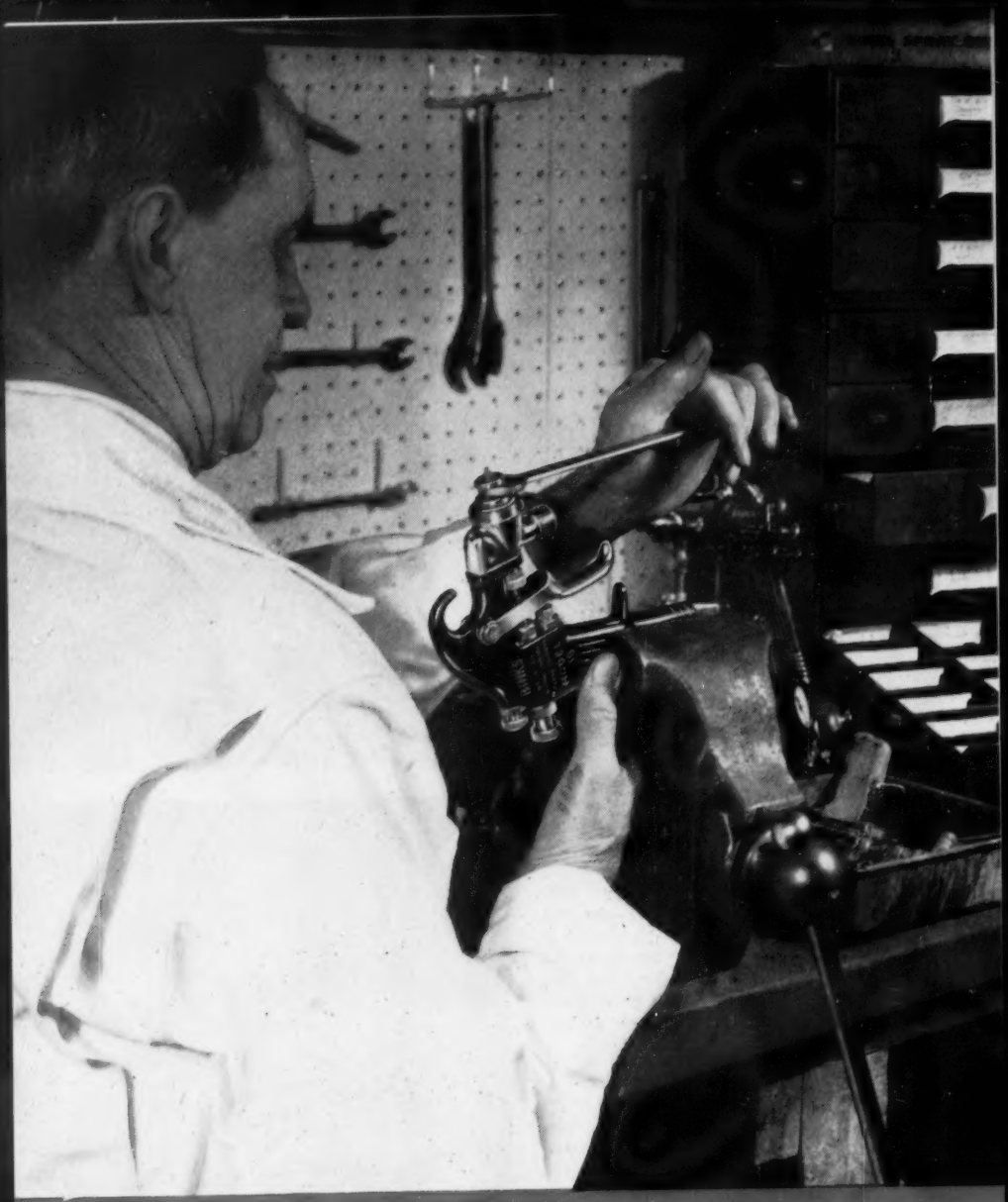


Fig. 7—Die-cast TV tuning knobs get a quick shot of heat from Calrod infrared tubes, which brings knobs up to baking temperature fast. Painted knobs then pass from radiation to convection portion of oven. This procedure gives equivalent of 30-minute bake in 20 minutes. The 14- by 25-foot oven, product of Jensen, Incorporated, contains 50 feet of conveyor, will permit future expansion. (Photos courtesy Precision Castings Company, Division of Harsco Corporation.)



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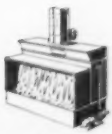

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Effect of Media Size and

Consistent, economical results from barrel finishing processes require careful selection and control of media and cycle.

By C. J. GLASRUD
Technical Supervisor, "Honite" Division
F. E. SMITH
Minnesota Mining and Manufacturing Co.

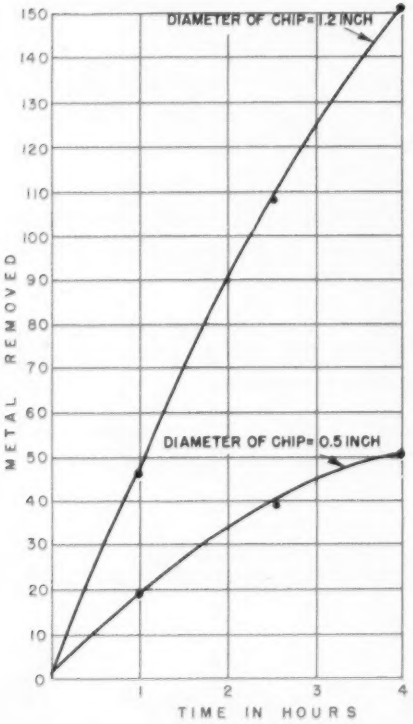

Fig. 1—Graph showing the effect of size of media upon rate of metal removal. Curves are averages for several metals. Barrel diameter—10 inches. Barrel speed—45 r.p.m.

THERE ARE MANY FACTORS which must be carefully controlled in any barrel finishing operation if it is to produce desired (and economical) results time after time. To discuss the entire barrel finishing operation in a single article means that we must often deal in generalities—or end up with a long, involved description. To write specifically about a barrel finishing operation, it is sometimes necessary to select one or two important factors and explore them thoroughly.

In order to elaborate more fully on two phases of barrel finishing which are basic and which have a definite effect upon ultimate results —we've run a series of tests to determine the effect of size of abrasive chip upon the cutting rate, and the effect of the time cycle upon the cutting rate.

The operator of a tumbling barrel soon learns that large-size tumbling media cuts considerably faster than the smaller sizes. This applies to all classes of media — bonded aluminum oxide, aluminum oxide, natural, shaped and others.

The relative difference between

Time Cycle on Barrel Finishing Results

"small" and "large" is broad in this instance, and has a critical effect on the rate of stock removal, as shown in Figs. 1 and 2.

Figure 1 shows the difference in cutting rate of two sizes of the same abrasive media where the larger media are approximately 1.2 inches in diameter and the smaller ones are about 0.5 inch. It is seen that at the end of the four-hour run the larger chip has out-cut the smaller one by a factor of nearly 3/1. In addition, the rate is accelerating faster on the larger chip.

A somewhat similar situation exists for the hard, natural rock chips; that is, the large sizes cut considerably faster than the small ones. In four hours under the conditions set in Fig. 1, a 1.2-inch natural chip would remove about three times as much metal as a 0.5-inch chip. It is apparent that the ratio is dependent upon time and it could also be shown to depend very strongly upon type of metal work, size of barrel, barrel speed, and several other factors. For our graphs we have, therefore, selected arbitrary conditions in order to give some comparisons.

Although the large natural chip is more effective than the small one, the natural chips as a class are considerably slower than the synthetic abrasive. The synthetics out-cut the naturals, size for size, by a factor of 2 to 4, depending upon the types compared.

Figure 2 gives a plot of the effect of size of an abrasive chip upon metal removal.

Figures 1 and 2 have been specific. They have been concerned only with the effect of conditions upon cutting rate. It is seldom in practical work that we can afford the

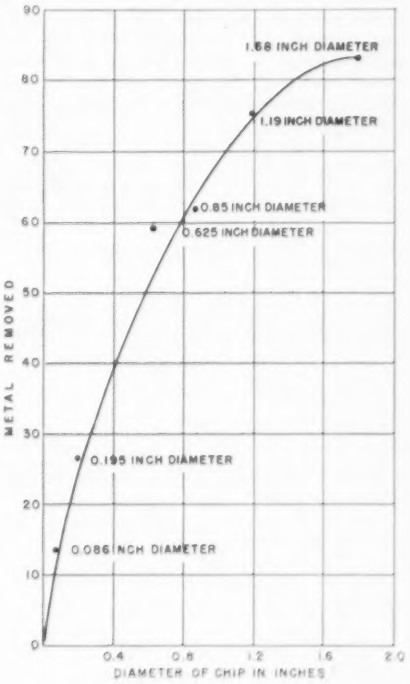

Fig. 2—Graph showing effect of chip size upon relative rate of cut on cold rolled steel. Barrel (10-inch diam.) filled with water to load level. Time: 4 hr. Barrel speed: 45 r.p.m.

"Soft steels and soft metals . . . can rarely be run in abrasive chips larger than 1-inch diameter."

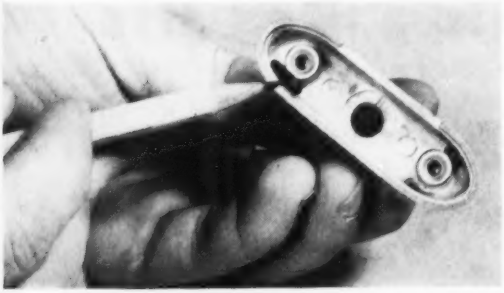

Fig. 3—The effect of cutting rate by different size chips has been plotted in Figs. 1 and 2; however, the practical side of chip selection demands that the chip be of a size that will not lodge in recesses of the part. Chips shown here were too small and they lodged, requiring additional time to pry them loose.

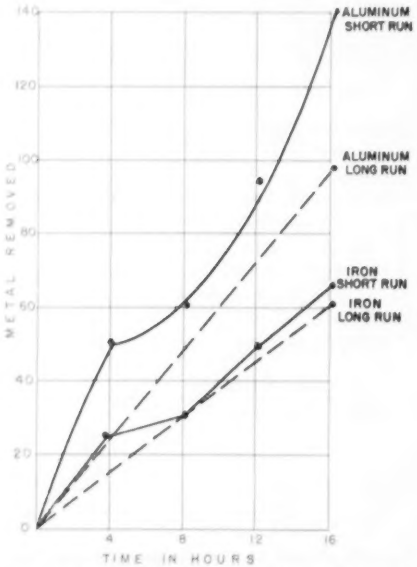

Fig. 4—Graph showing the effect of several short-time runs versus one long-time run in barrel finishing of iron and aluminum.

luxury of thinking only of cutting rate. We must very often be concerned about the surface finish of the parts and this consideration frequently rules out the fast-cutting, larger chips. Generally, a small chip gives a much better finish. Soft steels and soft metals like zinc, aluminum, magnesium, and so on, can rarely be run in abrasive chips larger than 1-inch diameter where fine finish is a consideration. Hard steel parts can often be run in 1- or 2-inch chips. Thus the upper limit on the chip size for a particular job depends upon the work parts (Fig. 3), the type of finish required, and the degree to which operating conditions can be modified to permit use of the large chip.

Aside from size of the tumbling chips, Figs. 1 and 2 indicate that another factor that is of great importance is time. It would seem possible that if a person had sufficient time, he could accomplish as much with a 0.5-inch size chip as he could with a 1.2-inch size. It would mean that he would have to tumble about 12 hours in the 0.5-inch chips where formerly the time was 4 hours in 1.2-inch chips. Most of us do not have that kind of patience or machine time. However, a compensating factor is that a superior finish is obtained with the smaller chip. Thus in practice, a compromise is often reached in which a chip intermediate in size is used, which also gives a compromise finish. Often the burr is small and the operation can be done with a smaller chip in less than 4 hours.

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Delpark Paint Spray Booth Filters

Filter the overspray from your wash water system and you'll increase your profit by reducing operating costs. Paint overspray is automatically removed from the wash water by periodic filtration cycles. Paint particles cannot foul the water jets, settle to the bottom of the tank or cause undue wear of the pump and recirculating system. Down time of the booth for cleaning and maintenance is eliminated, maintenance labor is released for other duties and productive time of the booth is increased. Pigments are more easily reclaimed adding even more to the savings.

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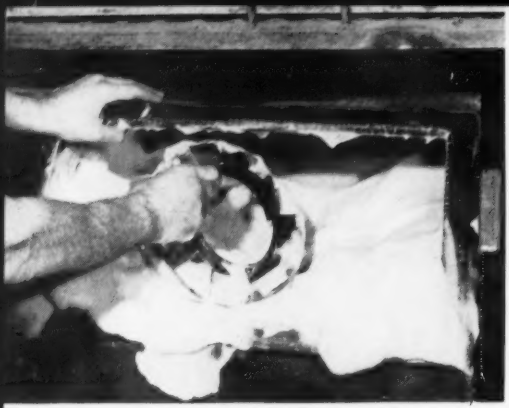


Fig. 5—Periodic inspection of parts is a necessary element in determining the time cycle for a given barrel finishing operation. It's important to know whether a given media cuts faster than another type; but it's even more important to know how fast any media is cutting during a specific operation. Periodic inspection will answer this question.

Barrel Finishing . . .

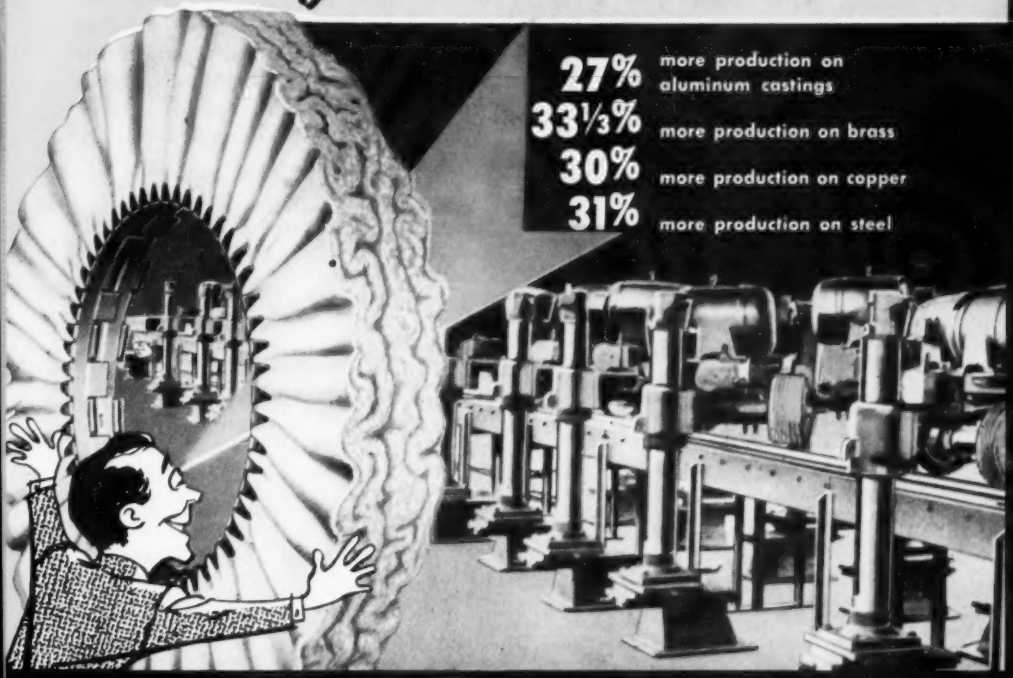
While the total time of tumbling is a big factor, it is also important to note how that time is applied. In general, several runs of short duration are better than the equivalent time spent in one long run. This is shown in Fig. 4.

The work pieces used in the "short run" curve of Fig. 4 were removed at 4-hour intervals and weighed, and then recharged with fresh water and compound. The workpieces from the "long run" were simply charged along with compound and water and allowed to tumble for an uninterrupted 16 hours. For the alu-

Fig. 6—Once a type of chip, a chip size and a time cycle have been determined for a given part, this information should be carded and filed for ready reference the next time a run is made on that part. In this modern barrel finishing installation the reference cards are clipped to the barrels during the run. They are protected from water and dirt by cellophane envelopes. When a run is completed, the card is re-filed. (Illustrations courtesy Minnesota Mining and Manufacturing Co., St. Paul 6, Minnesota.)

For more data on advertisement on opposite page, circle 323 on Reader Service Card→

Take a Peek... *for Peak Production!*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American's 7 Centerless Buffs
GUARANTEE 25% to 33⅓% MORE OUTPUT
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DUPLICATE these CERTIFIED GAINS in *your* plant! Patented "Pre-Assembly"* permits assembling complete buffing heads (up to 100 sections each) *in advance . . . instant* replacement in a *single operation . . . faster* changeovers, *negligible* down-time.

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Centerless BIAS CLOTH BUFF
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Centerless (Sewed) UNIT CLOTH BUFF
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American Buff Company

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"For the job that's tough . . . use an American Buff!"

minum parts there was a fairly strong advantage in breaking up the long run into smaller runs. On the iron test pieces, the advantage was small.

For those people tumbling overnight or for long periods, this matter of breakdown of time should be of vital concern from a cost-savings standpoint. In industrial practice it could show up even bigger differences than in the laboratory because so often in the field we find barrels, chips and parts are none too clean, and the periodic charging results in cleaner, lighter-colored workpieces as well as faster cutting.

★ ★ ★

A.S.T.M. Methods for Chemical Analysis of Metals. Published by the American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. 640 pages. Price, $8.00.

This publication contains all A.S.T.M. methods for chemical analysis of ferrous and non-ferrous metals and alloys, including spectro - chemical procedures.

There are ten completely new methods and recommended procedures in the book. These include chemical analyses for electronic nickel and titanium and two important recommended practices in the field of spectro - chemical analysis. In addition, ten standards have been substantially revised since 1950. The book contains 42 methods of analysis, including four spectro - chemical procedures. There are five recommended practices and one specification.

Here It Is

A STANDARD *Economy* UNIT DEVELOPED IN COLLABORATION WITH CUTLERY EXPERTS

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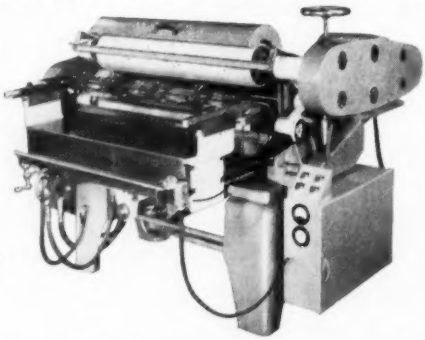

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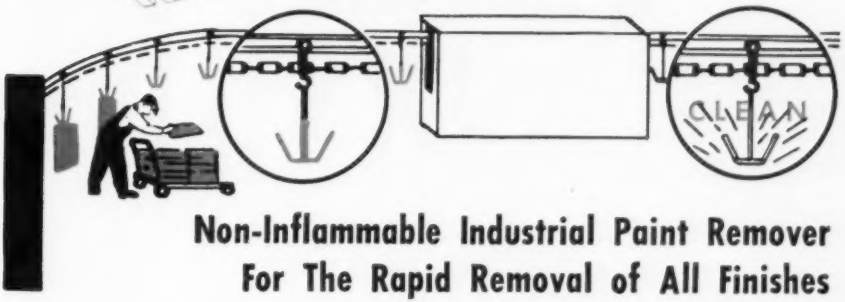
with RAP TANK SOLVENT #52



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RAP Tank Solvent has innumerable applications. Proved performance in varied fields attests to its efficiency. As illustrated, RAP Tank Solvent thoroughly cleans conveyor hooks (racks or baskets) with no line down-time. It excels in all other applications, such as removing Scotchlite or Prismo, baked enamels and lacquers etc.

RAP Tank Solvent: Is fast and sure RAP is non-inflammable RAP is non-caustic RAP will not harm aluminum RAP contains Dow Methylene Chloride RAP is practically odorless RAP is practically non-toxic.

Other RAP products daily meeting industry's needs.

RAP Metal Bond: Safe and sure for the preparation of metals before painting (iron, steel, galvanized, aluminum, etc.) . . . also removes rust.

RAP Flush Off Paint Remover: Widely used for industrial maintenance.

We invite custom formulating for special or unusual applications on cleaners and removing of paints.

Just write, wire or phone . . . for complete technical information.

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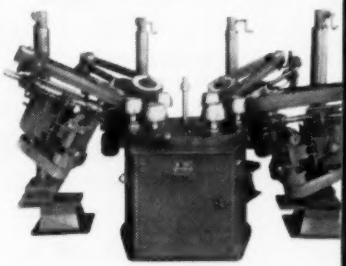
Sparkle

costs less when you polish and buff the *Acme* wa

It's the gleam in stainless, the sparkle in chrome that sells consumer goods today—a fact that makes the finishing line your most important operation. Unfortunately it may also be your most costly. This problem can be solved, however, by Acme engineers with Acme polishing and buffing machines.

Reduction of costly rejects, increased volume of production, complete machine finishing of odd-shaped problem pieces—these are a few of the cost-reducing solutions that Acme engineers have provided for troubled manufacturers. The cost is low, too, because these engineers combine Acme-designed *standard units* and a wide variety of accessories to design a *custom machine* for your job.

In plant after plant, Acme progressive engineering has built equipment that does i and better, too. Every year Acme me parts and new finish requirements, individual problem. What's yours?

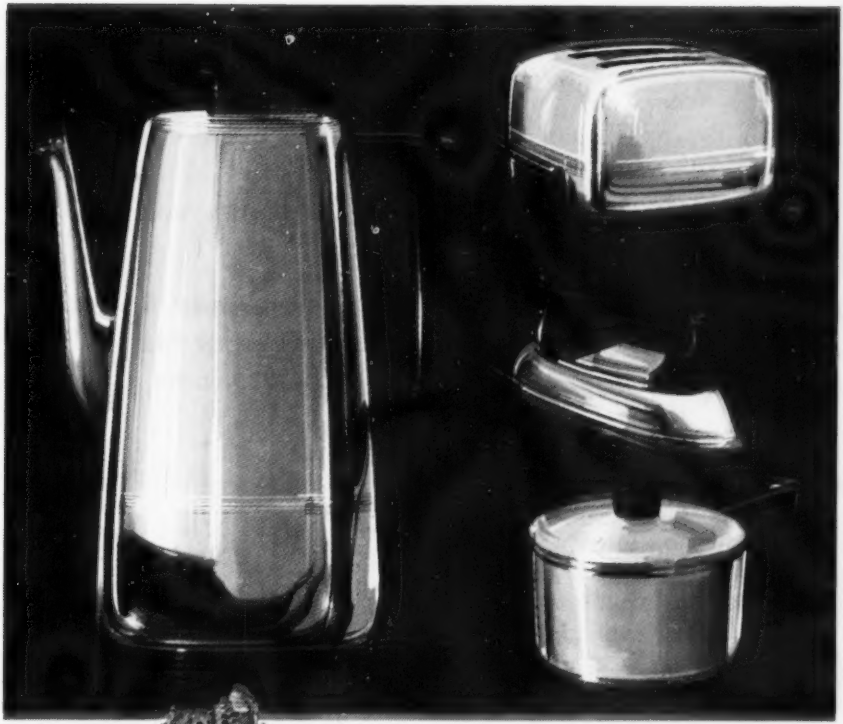


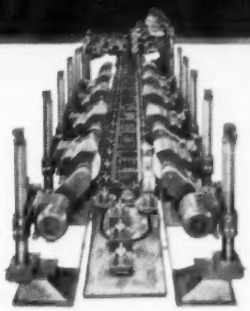
This Acme automatic 40-inch rotary wi station indexing table provides large polishing of cooking utensils. Four static Acme adjustable floating head buffin with polishing belt arm attachments, remaining two stations are used for and unloading.

LET ACME *Polish Off* YOUR FINISHING PROBLEMS

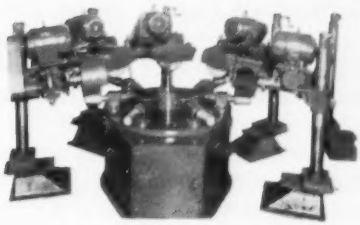
ACME MANUFACTURING COMPANY

LEADING PRODUCERS OF





Toaster bodies get fast, uniform buffing on this Acme 60-foot straightline conveyor with horizontal return. It is equipped with 16 heavy-duty adjustable floating head polishing and buffing lathes and universal indexing fixtures and adapters.



Vacuum chucking is featured on this Acme rotary automatic machine that buffs metal tumblers. Seven-station unit has five work stations and two loading and unloading stations. Typical of Acme flexibility, it easily changes to six work stations and one for loading and unloading.

1400 E. 9 MILE ROAD, DETROIT 20, MICHIGAN

AUTOMATIC POLISHING AND BUFFING EQUIPMENT SINCE 1910

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A.E.S. Convention Papers

Papers scheduled for presentation at the 44th Annual A.E.S. Convention, to be held June 16-20 at the Sheraton-Mt. Royal Hotel, Montreal, Canada.

First Educational Session

"Leveling in Cyanide Copper Baths—A Further Study," by Barnet D. Ostrow and Frederick I. Nobel, Lea-Ronal, Inc., Jamaica, N. Y.

"Bright and Semi-Bright Crack-Free Chromium," by Dr. E. J. Seyb, A. A. Johnson, and A. C. Tulumello, Metal and Thermit Corp., Rahway, N. J.

"Electroplating on Nickel and Nickel Alloys," by W. W. Sellers and C. A. Sanborn, International Nickel Company, Inc., New York, N. Y.

"Corrosion Resistance of Tin and Tin-Alloy Electrodeposits," by Dr. F. A. Lowenheim, Metal & Thermit Corp., Rahway, N. J.

Second Educational Session

"Effects of Plating on High Tensile Strength Steels," by Dr. W. Beck, U. S. Naval Base, Philadelphia, Pa.

"The Influence of the Physical Metallurgy and Mechanical Processing of the Basis Metal on Electroplating. IV. The Effect of Different Ferrous Metals on the Performance of a Watts Nickel Deposit," by Dr. M. M. Jones, Chih-Yen-Lu, J. Zajdouiski, Ontario Research Foundation, Toronto, Can.

"Analytical Methods for the Trace Quantities of Cyanide Compounds in the Plating Room Effluent," by W. F. Stevens and L. E. Lancy, Lancy Laboratories, Ellwood City, Pa.

"Accelerators and Their Function in Phosphatizing Solutions," by Lloyd O. Gilbert, Rock Island Arsenal, Rock Island, Illinois.

Third Educational Session

"A New Look in Plating Room Power," by C. F. Ivins, Jr., Hanson-Van Winkle-Munning Co., Matawan, N. J.

"Latest Developments in Electroplating with Ultrasonics," by Stanley R. Rich, General Ultrasonics Company, Hartford, Conn.

"Corrosion and Materials of Con-

struction in the Plating Room," by T. J. V. Cudbird, Canadian Hanson-Van Winkle-Munning Co., Ltd., Montreal, Canada.

"The Future of Plastics in Electroplating Plants," by H. Silman, Electrochemical Engineering Company, Ltd., Sheerwater, England.

Fourth Educational Session

"A Study of Application Techniques in the Use of Liquid Buffing Compounds," by E. T. Candee and S. Henn, Lea Mfg. Co., Waterbury, Conn.

"Sisal Buffing," by Howard J. McAleer, Formax Manufacturing Corp., Detroit, Mich.

"Barrel Plating," by Paul Glab, Chicago Branch, A.E.S.

"Industrial Chromium Plating," —A Film—by Arthur W. Logozzo, Nutmeg Chrome Corporation, West Hartford, Conn.

Fifth Educational Session

"Further Studies in Nickel-Iron Electrodeposits," by I. W. Wolf, General Electric Company, Electronics Division.

"Iridium Plating and Its High Temperature Oxidation Resistance," by J. C. Withers and P. E. Ritt, Melpar, Inc., Falls Church, Va.

"Surface Catalyzed Reduction of Copper," by A. E. Cahill, General Electric Company, Electronics Division.

(Left) P. M. Coady, Educational Chairman; (right) G. Ross Davidson, General Chairman for the 1957 A.E.S. Annual Convention.

Sixth Educational Session

"Sealing of Anodic Aluminum Oxide Films," by Dr. R. Spooner, Aluminum Laboratories, Ltd.

"A Study of the Effects of Various Forming Electrolytes on the Anodic Film," by Joseph M. Andrus, Croname, Inc., Chicago, Ill.

"The Effects and Removal of Impurities from Chemical Bright Dip Solutions for Aluminum," by R. F. Ledford, Industrial Filter & Pump Manufacturing Company, Chicago, Illinois.

"The Role of Chromate Treatments in the Finishing of Aluminum," by W. E. Pocock, Allied Research Products, Inc., Baltimore, Maryland.

The June issue of PRODUCTS FINISHING will contain complete information on the technical and social program for the A.E.S. Convention, to be held June 16-20 in Montreal, Canada.

SHAPED, EXTRUDED ANODES

3 STANDARD SHAPES
"RECTANGULAR"
"TEAR DROP"
"DOG BONE"
ROLLED FLAT PLATE ANODE SECTION:
This Photomicrograph shows highly irregular, uncontrolled grain size—a major cause of shedding and resultant rough electrodeposits.
Note small, fully controlled regularity of grain size that promotes uniform corrosion, smoothest electrodeposits, less rejects.
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THE GREATEST ANODE DEVELOPMENT IN YEARS

APW Shaped, Extruded Anodes were developed to extend the useful life of our anodes . . . to assure uniform and consistently smooth electrodeposits . . . to minimize shedding. They accomplish these objectives for our customers day after day—and in addition, *they have helped to lower plating costs!*

The anodes are scientifically shaped to retain 80% of original surface area *after 85% by weight has been plated off!* You get longer anode life, minimized polarization and less silver scrap to be refined.

The APW Extrusion Process* assures small, uniform grain size controlled between definite, ideal limits. Corrosion is smooth, shedding is virtually eliminated, rejects are a comparative rarity.

Be certain the silver you buy in anodes is used most efficiently and economically. Our service department will be glad to develop special anode shapes to meet your particular plating bath conditions. Call or write for a representative, we'll be glad to assist with your anode problems. ★ ★ ★ ★ ★ ★

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A.E.S. Tri-State Regional Meeting

Indianapolis Branch acts as Host for successful meeting

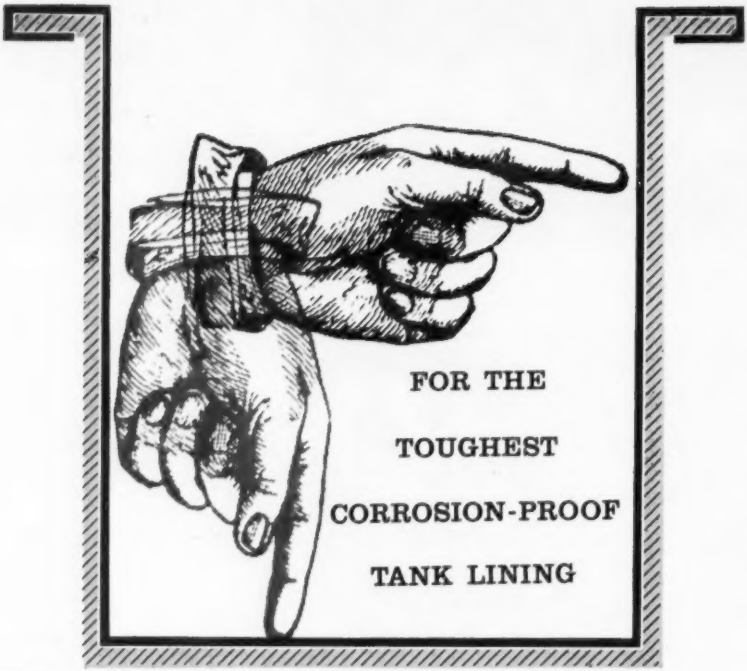
Fig. 1—American Electroplaters' Society First Vice President Frank T. Eddy and Mrs. Eddy enjoy a pre-meeting stroll in gardens of the French Lick-Sheraton Hotel, French Lick, Ind.

Fig. 2—Educational program officials and speakers. (Left to right): Loren Stevens, educational program chairman; R. D. Wysong, A. E. S. third vice president, moderator; R. O. Hull, R. O. Hull & Co., Inc., who discussed "Plating Control Methods"; C. F. Nixon, General Motors Research Staff, who outlined plating practices which can aid in "Nickel Conservation;" Dr. Thomas J. Bulat, Pioneer-Central Division, Bendix Aviation Corporation, who presented a paper on "The Role of Ultrasonics in Electroplating."

Fig. 3—A. E. S. ladies enjoyed a special luncheon and fashion show. Mink, anyone?

Fig. 4—Meeting concluded with banquet, entertainment and dance. Seated at speakers' table (left to right) are: C. F. Nixon, A. E. S. past president; Mrs. Stevens; Loren Stevens, educational chairman; Mrs. Hartwig; Frank Hartwig, ticket sales; Mrs. Bender; Roman C. Bender, program chairman; Mrs. Eddy; Frank T. Eddy, A. E. S. first vice president; Mrs. Anderson; Frederick Anderson, Regional Meeting chairman. (Continued below)

Fig. 5—(Speakers' table, continued, left to right): Mrs. Reynolds; M. Les Reynolds, Regional Meeting co-chairman; Miss Edna Rohrabaugh, custodian of funds; R. D. Wysong, A. E. S. third vice president; Mrs. Wysong; Bert Hawhee, ticket sales; Mrs. Hawhee; Quentin O. Shockley, entertainment chairman; Mrs. Shockley; Wm. J. Neill, A. E. S. past president; Ezra A. Blount, co-chairman 1958 A. E. S. Cincinnati Convention Committee. (Photographs by PRODUCTS FINISHING.)



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SPOTLIGHTING

finishing progress

Porosity Detection in Plated Coatings

A report on a new method of determining the size and position of pores in plated coatings . .

PORES AND OTHER FLAWS seriously impair the quality of industrially produced electroplated coatings, diminishing their effectiveness as protective coatings for metals. Until now it has been difficult to estimate the relative merits of electrodeposits since no method of determining the magnitude of defects was available. Recently, however, the National Bureau of Standards has developed a non-destructive procedure for ascertaining both the size and position of pores. The method involves photographing an electroplated specimen exposed to radiation.

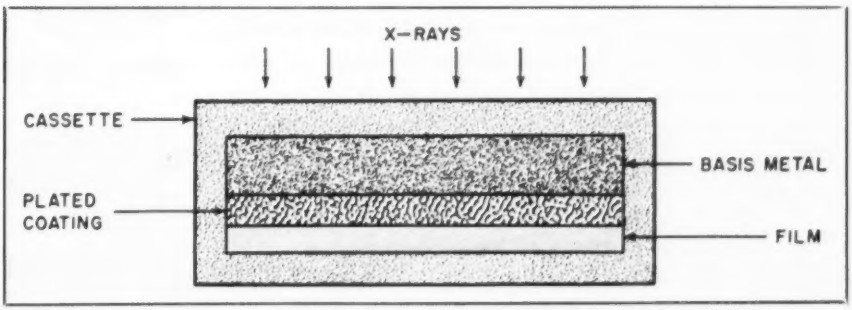

Fig. 1—Diagram illustrating the method developed at the National Bureau of Standards for investigating the porosity of electroplated coatings. The plated specimen is held against an X-ray film in a cassette with the plated coating against the emulsion side of the film. The basis metal side of the assembly is exposed to the X-rays or radiations.

Spotlighting Finishing Progress..

In earlier research, a technique applicable to plated coatings that have been removed from the basis metal was developed by the Bureau. However, the likelihood of stripped-coating porosity differing from adherent-coating porosity led to further investigation of the problem. The present work was carried out for the American Electroplaters' Society by F. Ogburn of the Bureau staff and Margaret Hilkert of the Society's research fellowship at the Bureau.

In determining the location and size of pores, the specimen, a flat sheet of plated metal a few thousandths of an inch thick, is placed on a photographic film with the coating against the film emulsion. The assembly is held in a cardboard cassette, and the basis-metal

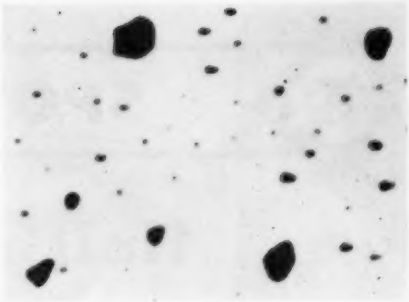

Fig. 2 — Radiograph of nickel deposit on steel obtained at the Bureau. The large black areas correspond to regions marked as points of reference before plating. Most of the other spots are due to visible gas pits and the smallest dots represent pores. (Illustrations courtesy National Bureau of Standards.)

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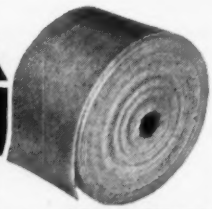
PACKED IN ROLLS OR IN BULK
JUST THE WAY YOU WANT IT!



Stays Soft and Tacky — A SPECK-FREE FINISH EVERY TIME — Now available in white or gold — in Three Different Types of Cloth.

There's a big difference in TACK-CLOTHS—that's why BOND processes three different meshes of cloth with several types of formulations to give you the cloth that best "fits" your special needs. You can get BOND TACK CLOTH packed just the way that suits you best, too—in 150 yard Rolls of 36" wide cloth or in handy Cartons.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

All BOND TACK CLOTH is Spontaneous Combustion Proof, Lint-Free and Wax-Free. Gives a sparkling speck-free finish every time. Clean and Sanitary. No waste.

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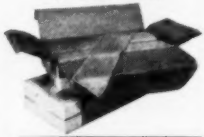
Cut off any size piece as needed.



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Size is 18" x 56"—folded to 4½" x 18" for ease of handling. Cut and folded—ready to use.
Also Individually Packed in Glassine Envelopes —144 to the carton—

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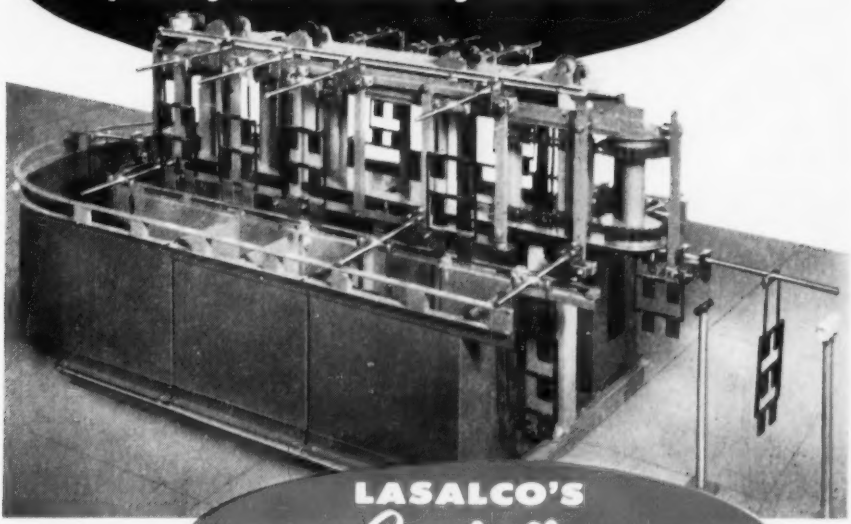
Most versatile of all fully automatic plating and anodizing machines



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New! Cycleflex

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- New, simple electro-mechanical control and safety device eliminates all possibility of conveyor failure . . . makes it impossible to push racks into side of tank . . . prevents load from dropping if power fails during work transfer.
- Unusually low headroom required because no elevating mechanism operates above rack carrier.
- Self-cleaning heavy duty contacts have positive 3-point connection . . . need practically no attention.
- Easily removable rack carriers leave tank surfaces clear . . . an advantage in servicing and in manual plating of large pieces.
- Automatic loading and unloading of parts from standard double-spine racks is available . . . parts can be automatically unloaded while racks stay on machine.

Hydraulic operation, standard; pneumatic operation, optional.

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LASALCO, INC.

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side of the specimen is exposed to X-rays or radiation from a radioactive material. To ensure good contrast, the X-radiation used must be soft. This requirement of low-energy X-rays limits the thickness of the basis material to several thousandths of an inch, since thicker metal absorbs too much of the X-ray beam and requires too long an exposure time. Radioactive iron, nickel, or cobalt held against the plated specimen in a cassette are also adequate sources of radiation.

After a suitable exposure time the film is removed and developed. Satisfactory radiographs result from a 3- or 4-minute exposure to an X-ray machine, and from a 24-hour exposure to a unit of radioactivity. Wherever a pore existed in the coating, a black spot appears on the developed film. A fine-grained industrial X-ray film gives the most readable radiograph.

This radiographic method detects pits, voids, and inclusions in the coating to the order of 0.001 inch in diameter. Discontinuities in the basis metal may also be determined by radiographing the metal before plating.

★ ★ ★

Buy a "Buddy" Poppy on Memorial Day.

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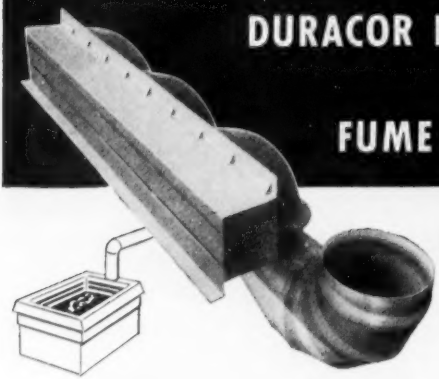

DURABLE glass fibre reinforced plastic in a complete range of shapes and sizes

Newly developed for handling fumes from highly corrosive chemicals in operations such as plating and pickling, DURACOR hoods and ducts provide permanent resistance to corrosion.

They are fabricated from specially compounded thermo-setting plastics which are combined with glass or other synthetic fibers. Hoods and ducts can be produced in almost any desired shape. They are light in weight, durable and strong (up to 30,000 psi flexural strength). Write today for complete information.

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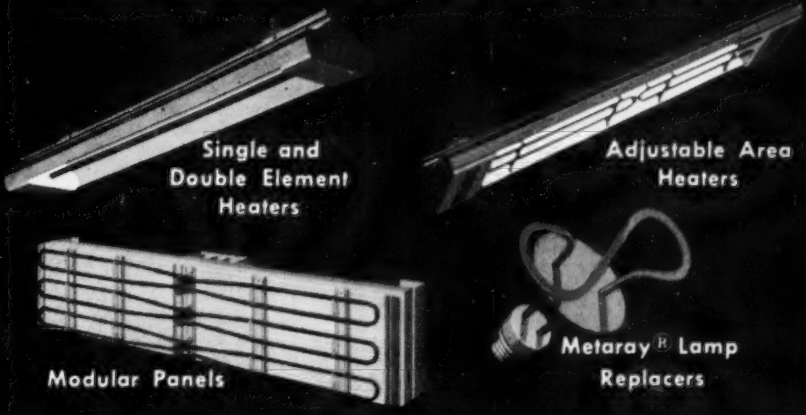
FAST uniform heating ...dialed to your exact need

CHROMALOX *Electric Far-Infrared*



Isn't this the heat you need?

Fast . . . up to 75% faster than convection

Uniform . . . no over- or undercuring

Color-blind . . . absorbed almost equally by all colors

Clean—safe . . . no fumes, no flames, no glare

Accurately controlled . . . with infinite number of settings to match different jobs

Unbreakable, all-metal, maintenance-free

Easy and economical to put on the job

Chromalox Electric Far-Infrared is the answer

FREE BULLETINS for each type heater. Tell us your needs and we'll give you specific recommendations. Write today.

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7522 Thomas Boulevard, Pittsburgh 8, Pennsylvania

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THE "RUSTY" Months are Here Again!

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to thoroughly rid metal of rust and assure greater paint durability!

Metalprep is a proven, superior product, backed by twenty-five years of metal conditioning experience. WRITE OUR CUSTOMER SERVICE DEPARTMENT FOR RECOMMENDATIONS FOR ELIMINATING YOUR RUST PROBLEM.

Also Other Products for Metal Conditioning, Phosphatizing and Preparing Metals for Paint.

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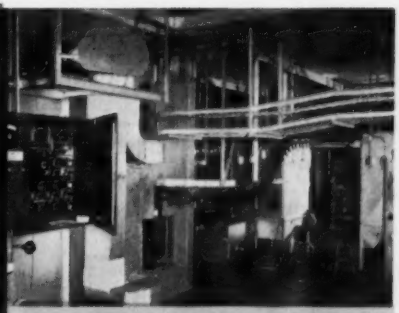
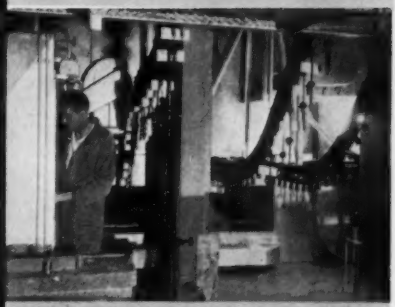
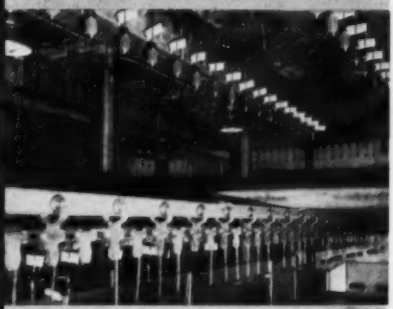
$135,000.00 Burdett Installation Amortized in 18 Months by Fansteel Metallurgical Corporation







A new multi-pass, conveyorized, Burdett Finishing System — jointly engineered by Mr. Henry H. Cormier, Fansteel's Process Project Engineer and Burdett Engineers — contains in 1,000 sq. ft., the facilities which normally would require 5,000 sq. ft.

Featured are air-stream heated ovens employing the famous Burdett "Radiant Heat" Burners for extreme economy, dip-spin finishing and conveyorized handling of products of manufacture.

RESULTS — night crew eliminated . . . former daily unit output now produced by one-half the former personnel requirement without added effort . . . plant potential increased by 40% to 50% . . . all this and greatly increased production too!

The total cost of this project included: revamping of material flow system; dismantling old equipment; cost of new equipment and cost of an additional three compartment batch oven to accommodate production requiring truck handling. The system has eliminated production traffic jams and constant re-positioning of trucks to move scheduled loads — thereby reducing the material handling problems to a minimum.

SEE OUR CATALOG IN SWEET'S PLANT ENGINEERING FILE OR WRITE FOR COPY

MORAL: *When you have a finishing system problem — BE SURE to consult Burdett Engineers*

BURDETT
MANUFACTURING COMPANY

4916 South Monitor Avenue • Chicago 38, Illinois
Detroit Philadelphia New York Cleveland Dallas

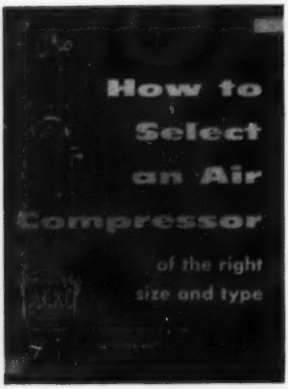
Manufacturers of
COMPLETE FINISHING SYSTEMS — "RADIANT-HEAT SYSTEMS", OVENS, HEATERS, AIR MAKE-UP UNITS, SPRAY BOOTHS AND WASHERS

For more data circle **335** on Reader Service Card

NEW BOOKS

How To Select an Air Compressor of the Right Size and Type. A booklet published by the Air Compressor Research Council explains a scientific method developed by the members of the Air Compressor Research Council for selecting an air compressor of the right type and size.

The booklet discusses air compressor ratings, displacement and "free air," volumetric efficiency, types of air compressors, and types of operation.



Free copies of "How To Select an Air Compressor" are available from members of the Air Compressor Research Council. Members include Binks Manufacturing Co., Chicago, Ill.; Curtis Manufacturing Co., St. Louis, Mo.; The DeVilbiss Co., Toledo, Ohio; Keystone Compressor Co., Philadelphia, Pa.; Quincy Compressor Co., Quincy, Ill.; United States Air Compressor Co., Cleveland, Ohio; The Wayne Pump Co., Ft. Wayne, Ind.; and Weaver Manufacturing Co., Springfield, Ill.

Copies also may be obtained for 50 cents each by writing directly to the Air Compressor Research Council, 27 E. Monroe, Chicago 3, Ill.

★ ★ ★

BARREL FINISHING CATALOGS. Explains in detail the many types of equipment available for barrel finishing operations.

The folder "How to Reduce Production Costs 80% or More" shows how savings can be made in barrel finishing. A catalog on the "Futurama Line" pictures a custom-styled line of

equipment that is adaptable to large, high production needs. Another line, the "Mity-Mite Line," offering a unit for every size plant, is also available in catalog form.

A catalog entitled "Media and Compounds" shows a wide variety of grades, grits and sizes. Slip-sheets covering "Handling Equipment" and other special units are also offered. Any one or all of the catalogs may be obtained from **Speed-D-Burr Corp.**, 3613 San Fernando Rd., Glendale, Calif.

★ ★ ★

INDUSTRIAL SPRAY PAINTING EQUIPMENT AND ACCESSORIES CATALOG. A 32-page catalog featuring paint and mastic spray units and accessories has been announced by Gray Company, Inc., Minneapolis, Minnesota.

Catalog No. 403 illustrates and describes Graco's equipment and accessories for maintenance and production spraying of paints, mastics and similar materials.

For a free copy write **Gray Company, Inc.**, 1039 Sibley St., N.E., Minneapolis 13, Minn.

For more data on advertisement on opposite page, circle **336** on Reader Service Card——→

New Udylite bright zinc ZB-57 FOR BARREL PLATING

Udylite Bright Zinc for barrel plating is an *entirely new* process which has been developed by The Udylite Research Corporation. By exacting comparisons, we find this new Bright Zinc Process to be the finest and most economical available. It has these outstanding features:

THE PROCESS

1. ECONOMICAL IN OPERATION
2. EXCEPTIONAL PLATING SPEED
3. WIDE BRIGHT PLATE RANGE
4. CAN BE TAILORED TO YOUR JOB

THE DEPOSIT

1. BEAUTIFUL BLUE-WHITE COLOR
2. BRIGHTEST PLATE WITHOUT BRIGHT DIPPING
3. RECEPTIVE TO CHROMATE TREATMENTS
4. EXCELLENT CORROSION RESISTANCE

SEE NEXT PAGE

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

WORLD'S LARGEST PLATING SUPPLIER

New Udylite bright zinc ZB-57 FOR BARREL PLATING

TO BETTER SERVE THE PLATING INDUSTRY UDYLITE ANNOUNCES an entirely new zinc process for barrel plating which further improves economy, speed and appearance of bright zinc plating. Tests in both the Udylite Research Corporation laboratories and in the field during the past eighteen months have proven the accuracy of these claims.

ECONOMY OF OPERATION is one of the important features. The zinc brightener is long lasting and stability is unusually good, even at elevated temperatures.

EXCEPTIONAL PLATING SPEED is attained with the new Udylite Bright Zinc Process for barrels. You can get up to 75% higher production per barrel and per man hour with this new process. It gives a beautiful bright zinc coating even at higher voltages.

AN UNUSUALLY WIDE BRIGHT PLATE RANGE Now more than ever you can get excellent color even though you are plating parts of complicated shapes with deep recesses. You will find a minimum variation in luster with the new Udylite Bright Zinc Process ZB-57.

CAN BE TAILORED TO THE JOB since variations in process can be made to an exacting degree to meet your special plating need, whether it be for an exceptionally deep throw of the zinc plate or the highest demands for speed.

BEAUTIFUL COLOR is obtained with this new process. Parts have a blue-white finish so highly desirable. The finish is unusually bright and far exceeds the accepted standards for a decorative bright zinc. It has a high eye and sales appeal finish.

BRIGHT DIPPING can be eliminated in most cases with Udylite's Bright Zinc for barrel plating since the deposits are so bright and have such exceptional luster. With the use of this process you can enjoy a minimum of processing steps to obtain the highest quality finish.

RECEPTIVE TO CHROMATE TREATMENTS where desired. The zinc surface deposit is extremely receptive to chromate treatments or for other clear or colored post treatments.

EXCELLENT PROTECTION AGAINST CORROSION The protection against corrosion afforded by a zinc coating is proportional to its thickness. This process is no exception. Users will receive more protection per dollar than ever before.

Consult your Udylite representative or write us directly about your needs for bright zinc plating in barrels. A test run of this new Udylite process will convince you.

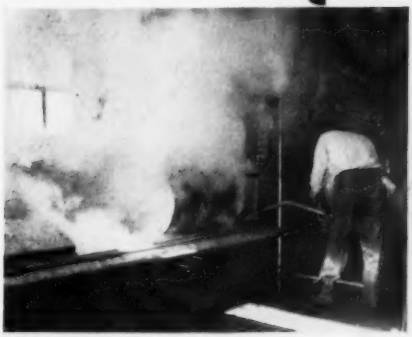
THE Udylite CORPORATION
DETROIT 11, MICHIGAN

WORLD'S LARGEST PLATING SUPPLIER

Samples for quality, clarity and color are taken, and sent to the laboratory prior to unloading any tank or transport.

Separate lines for each product eliminates any contamination.

QUALITY



Drums are washed in a boiling caustic bath, rinsed then air-blown to assure a dry container.

Each drum is candled to protect the product against any foreign matter.

These are a few of the quality controls that keep your Solvent or Chemical On-Specification.

Products of the Solvents and Chemicals Group: Aliphatic Naphthas, Alcohols and Acetates, Amines, Aromatic Solvents, Chlorinated Solvents, Glycerine, Glycols and Glycol Ethers, Ketones, Oils and Fatty Acids, Plasticizers, Resinates-Sodium and Potassium, Rosins-Gum and Wood, Stearates, Terpene Solvents, Waxes.

Bulk plants located at Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Fort Wayne, Grand Rapids, Houston, Indianapolis, Kansas City, Louisville, Milwaukee, New Orleans, St. Louis, Toledo and Windsor, Ontario, Canada.

Look for the SC seal in the "Yellow Pages" of your directory under the "Solvents" or "Chemicals" listing. Or write:

THE SOLVENTS AND CHEMICALS GROUP
2540 West Flournoy Street • Chicago 12, Illinois

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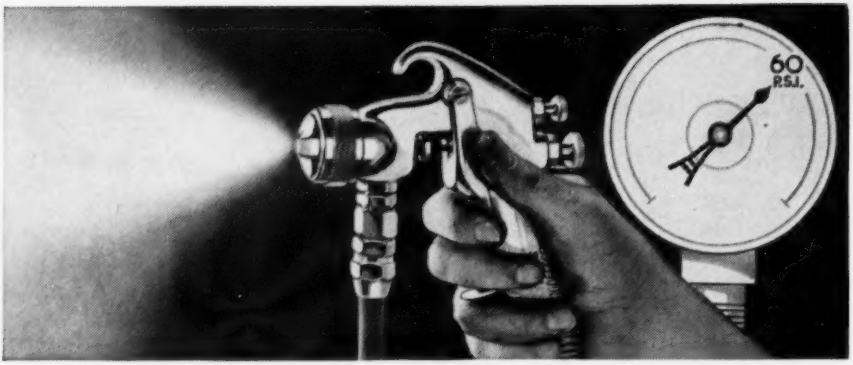
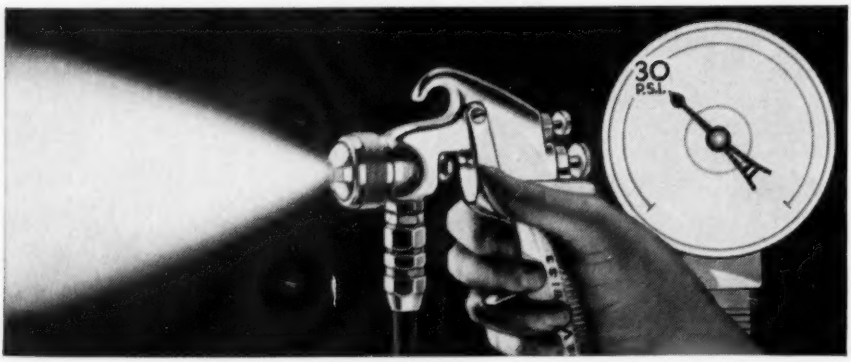
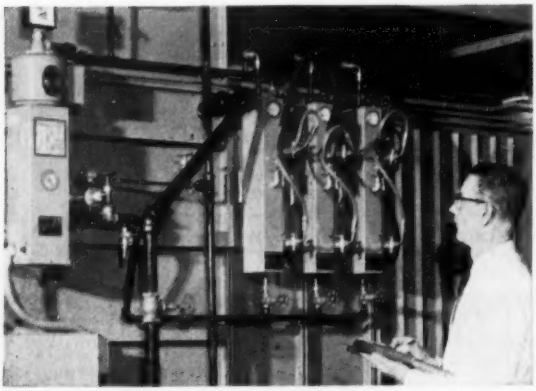


Paint sprayed cold with high atomizing air pressure often looks like this.



Paint sprayed hot atomizes with lower air pressure; reduces fog, saves material.



DeVilbiss hot-spray system is foolproof; adapts to multiple gun hook-ups. Here, one master water heater (left) serves three heat exchangers, each supplying a different spray material. To add another material at the station, a low-cost heat exchanger, gun, and hose are all that are needed.

Low-pressure spraying with

DEVILBISS PAINT HEATER

Saves Paint
Cuts Air Consumption

As much as 50% reduction in spraying pressure is a practical reality with DeVilbiss hot-spray method! Thinning spray material with heat permits easier atomization at far lower pressures, eliminating excessive overspray.

Instead of billows of wasteful spray fog, DeVilbiss hot-spray, low-pressure system actually puts more paint on the surface . . . less in the atmosphere. As for the paint film, there is less shrinkage, better coverage, less tendency to run, sag, leave fatty edges.

This means increased paint mileage, heavier film build where needed . . . all at a savings of up to 50% in materials!

Why not call a DeVilbiss representative today and arrange for a demonstration? Or, send for Bulletin F-286.

THE DEVILBISS COMPANY
Toledo 1, Ohio

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Branch Offices in Principal Cities

FOR BETTER SERVICE, BUY
DEVILBISS

For more data circle 338 on Reader Service Card

Practical Applications of Modern Products

Characteristics of Chlorinated-Rubber-Based Finishes

By R. D. ULLRICH
Cellulose Products Department
Hercules Powder Company

Standards for "product finishes" have improved substantially over the years. Progress and an educated public demand high-quality finishes on all types of products, whether directed to the industrial plant or to the consumer market. The consumer often accepts or rejects a product on the basis of the quality and appeal of its finish. At the same time, any finishing department must sets its own standards of cost, ease of handling, and equipment limitations for a finish that is to be used.

For these reasons, finishes based on Parlon* chlorinated rubber are finding a ready market for application on metals. There are several reasons for this acceptance of Parlon-fortified enamels by the finishing industry.

One of the most important advantages of Parlon is its excellent chemical resistance. This chemical resistance and ability to dry quickly, in combination with other important features, make it particularly useful for many applications.

Finishes containing Parlon are characterized by good adhesion to metal, excellent outdoor durability and a relatively high solids content. Inexpensive solvents are used for thinning; flame resistance is good; no catalyst is necessary; humidity resistance, hardness and abrasion resistance are other desirable properties. Of further importance is the compatibility of Parlon with many of the resins used in "synthetic" finishes. Thus it can be used easily to improve formulations and as a blending aid.

In many applications, most or all of the features are important. As an example, let us explore the metal castings field. For many years that portion of industry which makes metal castings has had a need for a protective coating for products to be stored and aged.

After a metal casting is made, it is usually aged for several months in order to eliminate the strains developed in the casting of the metal. Since adequate storage room indoors is usually scarce, the castings are often aged outdoors. To protect the castings from rapid corrosion the surface must be coated. Even when stored indoors, there is adequate humidity or moisture to cause rusting of cast iron.

In addition to the danger from corrosion, the surface of a casting is relatively porous; thus it is desirable to

* A registered trademark of Hercules Powder Company.

apply a "shop coat" to prevent absorption of oil, grease, or dirt while the casting is being handled or stored.

At the present time, people in the castings industry look for the following properties in a protective coating:

1. Fast air dry. Many castings are much too large to be baked.

2. Good resistance to corrosion in industrial environments. This requires (a) a more corrosion-resistant film-former; (b) more thickness in one coat and higher solids content.

3. Alkali resistance. Oil, greases, and dirt are removed with alkaline detergents.

4. Resistance to lubricating oils and greases.

5. Good machinability, which in turn demands (a) sufficient hardness so cutting tools do not gum; (b) sufficient adhesion so as to stick on a sharp cut edge; (c) resistance to heat.

6. Inexpensive, fire-resistant simple solvents. Particularly in applications by flow coat or dipping, a high flash point is desirable to lower the fire hazard.

The ability of Parlon to satisfy these requirements has created a demand for Parlon coatings for metal finishing. Even when modified with resins or plasticizers that are attacked by alkali or lubricating oils, Parlon coatings still afford good resistance to these agents.

A suggested starting formulation for a coating to be used on castings is 40 per cent Parlon, 45 per cent alkyd such as Duraplex C-55X, and 15 per cent plasticizer such as Aroclor 1254.

Chemical Resistance

Parlon has good resistance to acids, alkalies and salts. In commercial applications where chemical exposure is severe, successful finishes contain a high quantity of Parlon (50 to 60 per cent). In machinery enamel, the Parlon content can usually be smaller. Broadly, the range is five to 40 per cent, but usually commercial practice is 15 to 35 per cent. The extent to which Parlon contributes chemical resistance as well as increased drying speed to other film-forming materials is in proportion to the amount used.

The addition of Parlon also improves resistance to humidity, salt water, and water immersion. From a commercial point of view, improved acid resistance is advantageous in applications on farm machinery, agricultural tools and equipment, industrial pumps and motors, chemical vessels, conduits, and similar products. The alkali- and lubricating-oil-resistance is important on machine tools, metal castings, and chemical and industrial equipment. The humidity, water, and salt resistance of Parlon are of special importance in finishes for air conditioning and refrigeration equipment, and in marine applications: tugboats, barges, fishing vessels, offshore oil-drilling rigs.

Drying Speed

When Parlon is compatible with

"You just can't beat that stuff for adhesion!"

slower drying components such as alkyds, varnishes, or oxidizing oils, the drying speed of the unmodified finish can often be improved by addition of Parlon. It is not uncommon to find the drying time of these commercial "synthetic" finishes reduced by Parlon modification to 25 per cent of that of a comparable "synthetic" alone.

Hardness and Mar Resistance

A companion property to drying speed is the increase in hardness and mar resistance. These features are not only important in air-drying finishes, but diminish the time required for force-drying or baking in ovens.

Outdoor Durability

For machinery enamels, Parlon is frequently used with alkyds. It has been found repeatedly that the incorporation of 20 to 35 per cent Parlon does not detract from the weatherability of long-oil alkyds in rural exposure, and that Parlon contributes to better durability in salt or industrial atmospheres.

Recent Wilmington, Delaware, and Florida exposures of Parlon acrylics and Parlon non-oxidizing alkyd formulations have shown that these finishes exhibit gloss retention similar to acrylic-type automotive finishes. The future exposure results will be reported as they are completed.

Relatively High Solids

A Parlon machinery enamel may be applied by spraying, dipping, or roller coating. The solids for these applications vary with the Parlon, viscosity of the resin used, solvent, and the type and amount of pigment; but typical formulas have the solids contents shown in Table I.

It is evident that a machinery ena-

HOW TO INCREASE PAINT SPRAY BOOTH EFFICIENCY — AND LOWER COSTS!

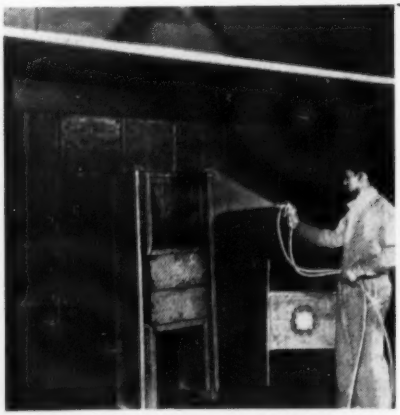


Photo Courtesy Globe Hoist Co., Philadelphia, Pa.

RP PAINT ARRESTORS REDUCE MAINTENANCE, FLOOR - SPACE REQUIREMENTS & DOWN-TIME

Efficiency and economy were combined to improve the paint spray operation in this booth illustrated. RP Paint Arrestor Pads trap overspray, are easily, inexpensively replaceable and adaptable to almost every type operation. If you spray paint—check the RP Paint Arrestor way to savings and efficiency.

RP . . . PRODUCTS OF RESEARCH

RESEARCH PRODUCTS CORPORATION
Dept. 38, Madison 10, Wis.

For more data circle **339** on Reader Service Card

Table I

SOLIDS CONTENT VS. VISCOSITY OF TYPICAL HIGH-GLOSS MACHINERY ENAMEL

Type of Application	Type of Parlon	Per cent of Parlon	Per cent of Alkyd	Per cent Solids	At Viscosity Ford No. 4 Cup
Spraying	5 cps.	25	75	54.2	27 sec.
	10 cps.	25	75	47.5	18 sec.
	10 cps.	35	65	50.2	26 sec.

mel containing Parlon has reasonably high solids. This fact has been responsible for its commercial use in one-coat spray applications on lawn furniture and farm machinery, for example; or one-coat dipping applications.

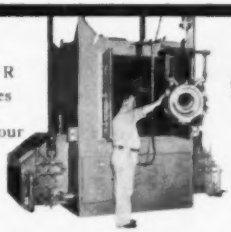
Formulations of Machinery Enamels

Many formulations for this type of finish are available. Several starting formulas, typical of usual practice, are shown in Table II.

Though most of the interest is in air-drying coatings, similar formulations are used in baking-type products. If, for example, initial fast air-drying speed were desired—but at the same time a later bake were to be applied—a combination of Parlon, amino resin, and alkyd has interesting possibilities.

Tests showed that the following amine resins are compatible with Parlon in ratios from 3-to-1 to 1-to-3: Resamine 881 (melamine type, Monsanto), Resamine U-920 (urea type,

Model CAB 42" x 42" WR STM processes ten or more castings per hour operated by one man.



NEW
SPIN-N-SPRAY WASHER
by INDUSTRIAL

removes all traces of metal chips and dirt . . . reaches hidden inner recesses of castings.

A new installation for The Trane Company required large compressor castings to be cleaned free from chips and dirt . . . rinsed, coated with rust preventive and dried. Industrial's staff developed this cabinet type washer with a special "spin-n-spray" design that achieves the task easily with the most effective cleaning results.

Compressor Casting, courtesy of The Trane Co. La Crosse, Wis.

For information write Dept. CH.

INDUSTRIAL SYSTEMS CO.

Exclusive Sales Agents For: Industrial Washing Machine Corp. Matawan, New Jersey

For more data circle 340 on Reader Service Card

Table II

TYPICAL FORMULAS OF PARLON MACHINERY ENAMEL

Type	High-Solids Spray	Standard Spray	Special Spray
Parlon S5	7.92	.....	.....
Parlon S10	.....	6.90	8.82
Duraplex D-65A (85 per cent MS)	27.83	24.27	19.08
Ti-Pure R-610*	22.31	19.42	22.40
Zinc Oxide	.....	.....	2.24
Lampblack	0.46	0.40	0.46
Hi-Flash Naphtha	13.15	15.95	.....
Turpentine	6.05	7.06	.....
Xylol	22.28	26.00	.....
Solvesso 100	.....	.....	30.30
Toluol	.....	.....	16.70
Total	100.00	100.00	100.00
Added Ingredients:			
6 per cent Cobalt Naphthenate	0.11	0.10	0.15
6 per cent Manganese Naphthenate	0.11	0.10	.....
Epichlorohydrin	0.04	0.04	0.05
National Aniline ASA	0.06	0.05	0.06
Ratio Parlon to Alkyd	25:75	25:75	35:65
Ratio Pigment to Vehicle	1:1.38	1:1.38	1:1
Solids, per cent	54.2	47.5	50.2
Viscosity (Ford No. 4 sec.)	27**	18**	25**
Sward Hardness (1 mil-24 hrs.)	8***	20	14
Conical Mandrel (Elong.)	>30%	>30%	>30%
Conical Mandrel (Adhesion)	Good	Good	Good
Gloss	Excellent	Excellent	Good

* Dyphos (4 per cent based on Parlon weight) in place of part of the pigment improves heat and light stability. In the presence of sulfide fumes Dyphos will discolor. In such cases Stabilizer A-5 (2 per cent based on Parlon weight) can be added to the formulations.

** Spraying Equipment: MBC DeVilbiss Gun, 40-45 pounds pressure.

*** Film Thickness ..... 1.5 mils
Drying Time (Dust Free—minutes) 17
Drying Time (To handle—minutes) 40

Table III

SUGGESTED FORMULATION FOR FAST AIR-DRYING WHITE ENAMEL

Paste	
Titanium dioxide RA	55.0 lbs.
Duraplex C-55X (70 per cent in Xylol)	41.8 lbs.
Xylol	3.2 lbs.
Enamels	
Paste	100 lbs.
10 cps. Parlon (35 per cent in Amsco B)	45 lbs.
Xylol	23 lbs.
Total solids (80 seconds No. 4 Ford Cup)	59.5%

Monsanto), Uformite F-240 (urea type, Rohm & Haas). Although not specifically tested, they are probably compatible in any proportion.

Modification of Some Typical Machinery and Automotive Enamels

The Resinous Products Division of the Rohm & Haas Company has two alkyds—Duraplex* C-55X and D-65A—which many people use with Parlon. Recent brochures from Rohm & Haas are of interest. They show the effect of 20, 25, and 35 per cent Parlon 10 cps. and Duraplex C-55X on viscosity, drying time, hardness, and gloss of machinery enamel.

The Rohm & Haas suggested formula for a fast-drying, automotive-type enamel is of interest, but note that 15 per cent Parlon is recommended. We believe that 25 to 33-1/3 per cent is required for fast-dry and at least this much to obtain "films which tape well within minimum drying periods."

The following data on the use of Parlon with Duraplex C-55X and D-65A quotes from Rohm & Haas information on this subject.

Fast-Drying Enamels

Enamels with extremely fast air-drying speed can be made using combinations of Duraplex C-55X and Parlon. Concentrations of Parlon ranging from 20 to 35 per cent give set-times in the range of 10 to 15 minutes with a Sward Hardness of 22 after drying overnight.

In addition to their outstanding drying speed, these combinations of Duraplex C-55X and Parlon have good gloss and color, and high resistance to acids, alkalies and other chemicals. White and colored enamels combining these excellent film properties can be

Table IV

DRYING CHARACTERISTICS OF WHITE ENAMELS

Ratio of Duraplex C-55X/Parlon	Total Solids at 80 seconds #4 Ford Cup	Spray Solids	Set Time (Minutes)	Tack-Free Time (Minutes)	Rating of Overnight Hardness		Photovolt Gloss
					Fingernail	Sward	
80/20	62.5%	51%	15	120	3	12	85
75/25	62.5%	50%	14	90	2	12	84
65/35	59.5%	46.5%	11	30	1	22	85
65 C-55X 25 Parlon 10 801 XLT[1]	56.5%	47.5%	12	40	1	20	83

(1) Amberol 801 Extra light, Cold Cut.

* Duraplex is a trademark, Registered U. S. Patent Office and in principal foreign countries.

made readily. Such enamels find use in coating machinery and industrial equipment, particularly where outstanding chemical resistance is needed.

A suggested formulation for a fast air drying white enamel is given in Table III.

Table V

SUGGESTED FORMULATION FOR DURAPLEX D-65A FAST-DRYING, AUTOMOTIVE-TYPE GRAY ENAMEL

Roller Mill Grind	Lbs.	Gals.
Titanium Dioxide	304.7	9.39
Lampblack	6.2	0.44
Duraplex D-65A[1]	103.7	12.75
Mix With		
Duraplex D-65A[1]	434.5	53.43
Parlon[2]	163.4	18.89
Xylol	33.6	4.64
6% Cobalt Naphthenate	1.6	0.25
6% Manganese Naphthenate	1.6	0.21
	1049.3	100.00

Constants

Weight Per Gallon	10.5 lbs.
Total Solids	66%
Pigment	45%
Binder	55%
Duraplex D-65A	85%
Parlon	15%
Drier (Metal based on alkyd solids	0.03% Cobalt
	0.03% Manganese

Notes:

(1) This is a special solution of Duraplex D-65A made by reducing the 85 per cent solids mineral spirits solution with xylol to 60 per cent solids.

(2) Low-Viscosity Parlon was prepared at 35 per cent solids in xylol.

Four parts of this formulation should be reduced with one part of xylol for spray application. The films produced dry very rapidly to the point where dust is not retained by the film. In addition, the films tape well within minimum drying periods. The durability of this coating is excellent.

Suggested driers are 0.05 per cent cobalt and 0.1 per cent calcium as metal based on Duraplex C-55X solids. The formulation should be reduced to spraying viscosity (about 46 per cent solids) with xylol. The enamel has a pigment: vehicle ratio of 55:45; the vehicle contains 65 per cent Duraplex C-55X and 35 per cent Parlon.

Drying Characteristics

Several different combinations of Duraplex C-55X and Parlon have been checked for drying characteristics in white enamel formulations similar to the one given in Table III. A summary of properties for such enamels is given in Table IV.

Other Fast-Drying Enamels

Research continually is effecting improvements in standard products. Such a development is Duraplex D-65A, a phthalic alkyd resin which represents a substantial advance in the technique of formulating and producing alkyd resins.

Designed primarily for use in architectural whites, Duraplex D-65A also is being used advantageously in mill whites, in semigloss and flat coatings, in truck and bus enamels, and in other exterior and interior finishes. Outstanding characteristics of Duraplex D-65A finishes are the high initial gloss, pale color, and the retention of these properties; desirable drying properties, including through-drying; excellent pigment stability; resistance to water and chemicals; and good compatibility with oils and resins. Duraplex D-65A in itself contains no modifying agents, but can be blended with other resins or varnishes if desired.

A suggested formulation for a Duraplex-Parlon fast-drying automotive-type enamel is given in Table V.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

For further information on any product mentioned in this issue—use the READER SERVICE CARD inside front cover.

"Formulators of metal cleaning compounds prefer Dow Alkali"

Costs in your metal cleaning operation are directly affected by the cleaning agent used. Take into account how fast and thoroughly it cleans, as well as the purchase cost. If it doesn't clean with top efficiency, chances are your over-all cleaning costs are not as low as they could be.

Many plants have cut costs substantially by switching to products made by formulators who use Dow Alkali. The reason is simple: Dow Sodium Orthosilicate and Dow Caustic Soda deliver the highest alkaline cleaning power you can buy for any price.

Why not give it a try?

THE DOW CHEMICAL COMPANY, Midland, Michigan, Department AL-608L-1.

YOU CAN DEPEND ON DOW

For more data circle 341 on Reader Service Card

Fig. 1—A 24-inch mill roll is placed on the carriage of Pangborn Rotoblast equipment by a lift-truck equipped with special boom.

Abrasive Blast Produces Matte Finish on Mill Rolls

Thomas Strip Division of Pittsburgh Steel Co., Warren, Ohio, produces cold-rolled strip steel in a variety of grades and finishes. For producing some of these products mill rolls with a matte finish are required. Abrasive blasting these rolls periodically has been found to be a good way to maintain such a finish.

The matte-finished mill roll imparts the proper type of finish to steel strip when specifications call for it; it is also desirable, where it can be used,

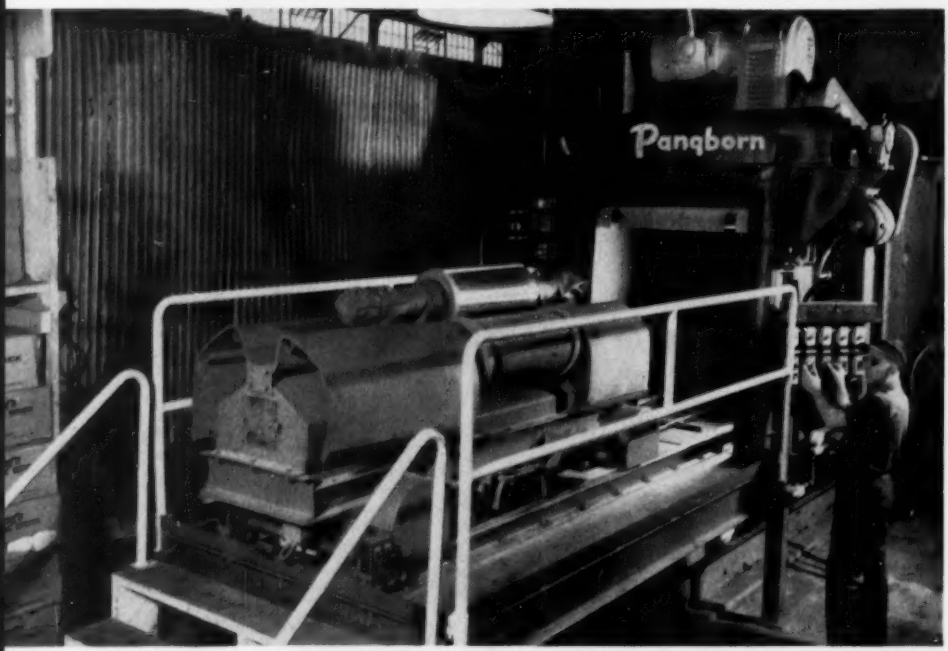


Fig. 2—After masking bearing ends, operator pushes button to start rotating roll on carriage. Pushing second button starts cycle. Carriage moves forward into blast chamber, doors close, Rotoblast wheel starts throwing abrasive, carriage travels to end of chamber, limit switch reverses travel through blast stream, wheel stops and doors open.

Finishing Problem?...

Experience

WATSON-STANDARD'S EXPERIENCE IN FORMULATING SPECIALIZED COATINGS IS INVALUABLE TO METAL FINISHERS

If your product includes metal finishing in its manufacture, it is wise to consult the Watson-Standard Laboratories on your coating problems. The services of our laboratory and field technicians are available without obligation.

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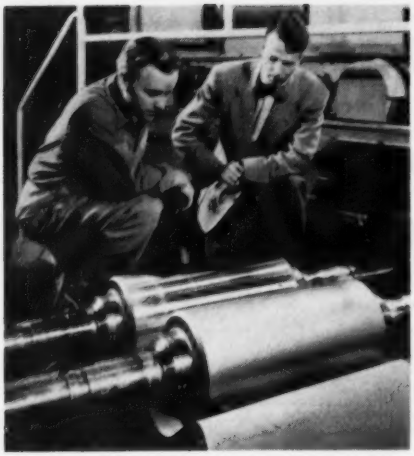

Fig. 3—Finished roll is shown in front, untreated roll with too-smooth finish in rear.

to prevent sticking of coiled strip caused by annealing.

To abrasive blast the rolls, special Pangborn Rotoblast equipment has been installed. This equipment incorporates a carriage especially designed to accommodate the mill rolls. The carriage travels on wheels into the Rotoblast unit. The cycle is automatic after the roll has been loaded onto the carriage. Two buttons are pushed to begin the cycle: one starts the Pangborn dust collector and the second button starts the main cycle.

The cycle is as follows: the car carrying the roll travels into the chamber and stops; the door closes; the stream of abrasive blast material begins and the work travels through this stream until the door of the cabinet is reached; the Rotoblast stops and abrasive shuts off; the door opens and the work emerges to the original position. The entire cycle required to matte-finish these mill rolls takes 3½ minutes. Time under the Rotoblast is 45 sec.

For more data circle 1 on Reader Service Card

NO BULBS OR SOCKETS TO BURN OUT

NO COLD OR HOT SPOTS with driQuik INFRA-RED INTERLOCKING OVEN SECTIONS

ovens any size or shape

WRITE TODAY FOR LITERATURE showing how you can speed up production and reduce costs by building or having us build driQuik ovens for your needs.

There's nothing anywhere like the driQuik infra-red generators which are lava coated and deliver far more infra-red rays with less power consumption than any other method known. They not only cut down replacement cost; they're immune to shocks, vibration, moisture.

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DRY CLIME LAMP CORP.
GREENSBURG, INDIANA

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NEW! Orbital Air Sander weighs only 3 lb, handles production jobs easily

● New Model OS-800 is the lightest weight air sander on the market, yet has all the features needed for production jobs. Easy palm lever control makes it ideal for restricted areas, vertical surfaces, rough or finish sanding.

Counterbalanced action and light weight reduce operator fatigue and strength required to do a good job all day. What's more, you get the same high quality you find in every straight-line and orbital sander built by Sundstrand at a cost that is surprisingly low!

Write today for more details about the Model OS-800.

SUNDSTRAND MACHINE TOOL CO., Pneumatic Division, Rockford, Illinois

SUNDSTRAND

A name to remember in **AIR SANDERS**

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A revolutionary development

● **DURACRON Enamel** is a distinctive and new development of the Modern Paint Research Laboratories of the Pittsburgh Plate Glass Company. It is not merely another modification of existing finishes, but a basically new chemical composition, and a revolutionary departure from the baking enamels used today.

● **New DURACRON** is particularly well adapted to the finishing of refrigerators, home laundry equipment, ranges, and air conditioning units. However, its amazing toughness, mar resistance and durability may be advantageously employed for other products on which it is desirable to improve present baking enamels.

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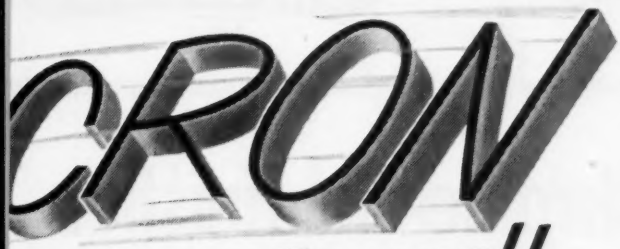
PITTSBURGH PLATE GLASS COMPANY

in industrial finishes!



Acrylic Enamel!

Only New DURACRON offers you all these advantages over other baking enamels:

- Superior adhesion—either to bare metal or to primer.
- Outstanding toughness, hardness and impact resistance—either as a one-coat enamel or over primer.
- Remarkable color and gloss retention for prolonged periods at temperatures up to 400°F.
- Greatly increased resistance to modern detergents.
- Greases, inks, fruits, mustard, ketchup, etc. will not stain.
- Gives improved resistance to salt spray, humidity and other corrosive atmospheres.
- Provides a sanitary, taste-free, mar-proof liner for food cabinets.
- Retains film continuity even under severe impact.

Mail This Coupon Today—It May Improve the Beauty and Durability of Your Products.

We'll be glad to provide you with additional information of new DURACRON. Mail coupon at right to Pittsburgh Plate Glass Co., Industrial Finishes Div., 1 Gateway Center, Pittsburgh, Pa.

Pittsburgh Plate Glass Company,
Industrial Sales Division,
1 Gateway Center, Pittsburgh, Pa.

Gentlemen: Please send me additional information about your revolutionary new DURACRON.

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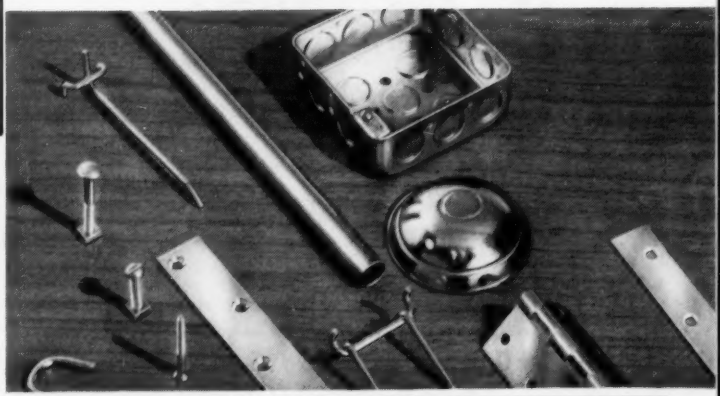
News about ®

UNICHROME
Trade Mark

Typical products for which new economical Unichrome Dips are especially suited. Costs for dip compound are between 30¢ and 60¢ per 1000 sq. ft. of surface treated.

Chrome-like finishes



Time saved both in and out of chromium tank

Self-regulation is a must for the ultimate in fast chromium plating.

Unichrome SRHS® Chromium is unique in that a reserve of chemicals is in the tank dissolving in just the amount to replenish losses. It thereby keeps the bath ingredients in optimum plating balance for best results. This not only saves time outside the tank on control tests, but also maintains high cathode efficiency and bright plate range. These in turn maintain high plating speed, enable a larger load to be covered per cycle, and minimize rejects and the waste of time and money they represent.

NEW CYLINDRICAL ANODE EXPOSES LARGER EFFECTIVE SURFACE

A new style of Unichrome round anode for chromium plating features a ribbed perimeter. The ribs give 75 current throwing edges or "points" in the 2" diameter anode, and 55 edges in the 1½" anode.

This multipoint ribbed anode prevents trivalent chromium build-up in solutions where cathode area is large. It also offers the advantages of the original smooth round Unichrome Anode. These include longer life, better current distribution, high conductivity, resistance to warping. Send for data sheet RRA-1.

produced at new low cost

New economical Unichrome Dip Compounds add sales appeal to zinc products

For the first time bright chrome-like finishes become economically practical for electrical conduit, junction boxes, toy wheel goods, and other low cost zinc plated products including rough hardware. Economical chromate treating with newly developed Unichrome Dips is now being used to increase shelf life and sales appeal of even the most competitively priced products.

The new Unichrome Clear Dips operate at extreme dilutions. Make-up costs are low. So are operating costs, even where dragout is a factor. A unique feature of these Dips is their stability, which saves through long "mileage" and consistent results.

Use of these Unichrome Dips also cuts need for brighteners in the zinc bath, since products emerge from the chromating solution with chrome-like brilliance.

IMPORTANT FACTS ABOUT CHROMATE FINISHES

Since the chromate solution has a stripping action on the zinc, operating cycle affects results. So does the type of equipment. In order to get the color, corrosion resistance, uniformity and economy desired, the chromate process *must* be matched to the differing needs of automatic and manual finishing.

No single chromate material satisfies all needs. Metal & Thermit, long associated with the plating industry and problems of finishing with zinc, is well qualified to assure the proper dip for specific requirements. Unichrome Dip Compounds represent one of the widest lines of chromating materials available.

Unichrome is a trademark of Metal & Thermit Corp.

METAL & THERMIT
CORPORATION

General Offices: Rahway, New Jersey
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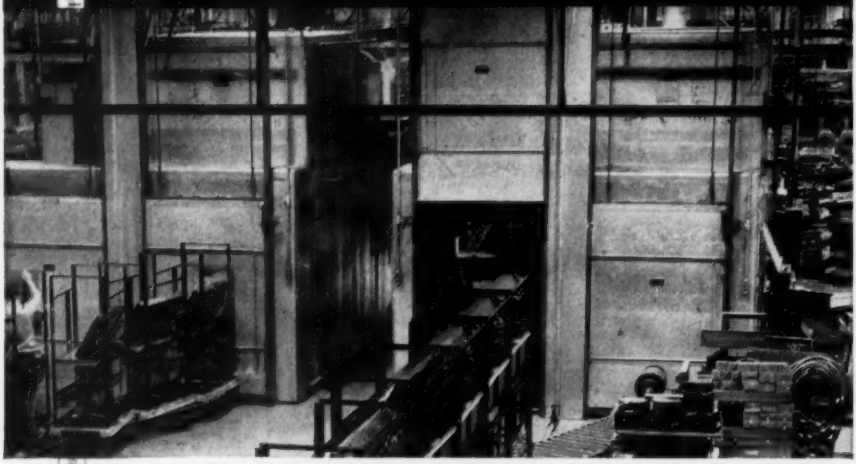
300° guarantees cool summers



Four huge 27′ long KIRK & BLUM ovens assure efficient dehydration of air conditioning units at WESTINGHOUSE ELECTRIC CO., Staunton, Virginia.

The ovens are steam heated to 300° F., re-circulating, automatically controlled. Galvanized steel construction resists moisture action. Thick fiberglass insulation minimizes heat loss. There is no external ductwork, except exhaust stacks through roof.

Large console cooling units can be accommodated, since the automatically operated vertical oven doors are 5′ x 8′.

For every oven need, consult KIRK & BLUM. Write for new "Ovens for Industry" catalog. The Kirk & Blum Mfg. Co., 3116 Forrer St., Cincinnati 9, Ohio.

KIRK & BLUM

OVENS FOR INDUSTRY

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SAVINGS WITH FULLY-AUTOMATIC, AGITATING DIP-CLEANING METHODS!

Modern, automatic, high-speed production lines demand modern automatic cleaning machines . . . and Magnus makes them.

The Magnus Aja-Lif Automatic Cleaning Machine shown above, with Magnus #71 buffing compound remover, is used by a major bearing manufacturer to remove grinding grease from bearing races. Parts are automatically agitated in each of the stages of pre-wash, wash, rinse and anti-rust, and automatically transferred from one stage to the next on a pre-set time schedule.

The result . . . ? Thousands of dollars per year saved, without the hazards of solvent cleaning. And you, too, can realize the same savings and safety. For full information, simply write Magnus, 208 South Avenue, Garwood, New Jersey.

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Industrial Cleaning Division

MAGNUS CHEMICAL CO., INC.

a world-wide organization specializing in cleaning and protection of all surfaces.

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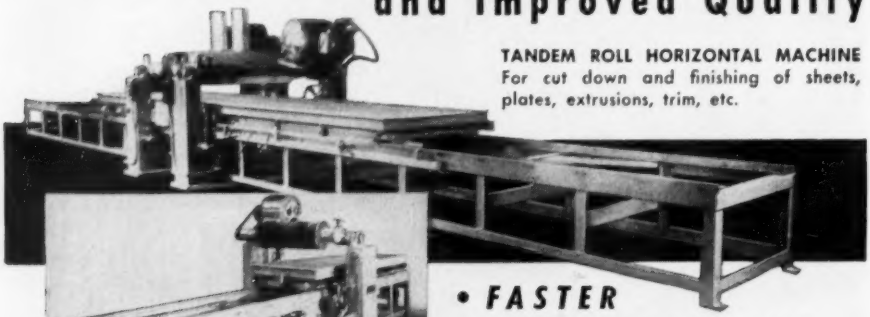
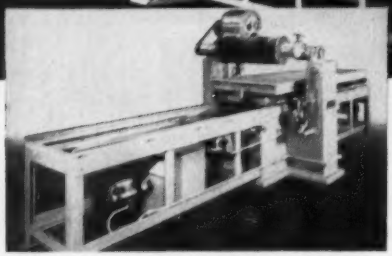
Pay Big Dividends in Time Saved and Improved Quality



TANDEM ROLL HORIZONTAL MACHINE
For cut down and finishing of sheets, plates, extrusions, trim, etc.



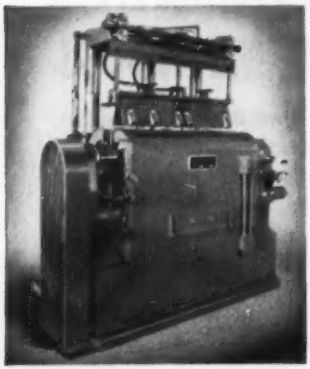
SINGLE ROLL HORIZONTAL MACHINE
Hydraulically operated, with patented hydraulic contour device. Tables on all machines may be oscillated sidewise.

- *FASTER*
- *MORE EFFICIENT*
- *ECONOMICAL*

For cutting costs, improving quality and speeding up your finishing operations on sheets, plates, extrusions, rods, tubing, auto trim and many odd-shaped pieces, Central Polishing Machines will meet every production requirement as they have done so successfully wherever they have been installed.

Horizontal Machines are built in single and tandem roll models, 30", 40" and 50" widths, in any length. Are hydraulically or electro-hydraulically operated from a central operator's station and equipped with our patented hydraulic contour control. Stroke adjusted from 2" to full capacity in stepless increments. Tandem rolls permit cut down and finishing operations with one set-up.

Vertical Machines are available with 18" or 36" stroke. They are fast, economical and easy to operate. Patented hydraulic contour device permits finishing many different shapes such as hardware items, handles, cutlery, auto and appliance trim, escutcheon plates, etc. Central Vertical Machines may be set in batteries where a sequence of operations is desired. Conveyor systems and fixtures can be furnished.



VERTICAL POLISHING MACHINE
2 sizes, 18" and 36" stroke. Hydraulic contour device. Gives a high finish to many odd-shaped pieces.

Write for full information or send us samples of work to be finished.

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SPEEDS PRODUCTION, SAVES ON LACQUER, GIVES SMOOTH FURNITURE FINISH

FURNITURE MANUFACTURER USES ROLLACOATING TO GIVE SUPERIOR FINISH, SAVE ON MATERIAL . . .

. . . and the Gasway coater paid for itself in five months' time

Problem: Colony Furniture Company was building a new line and had to have the lowest possible cost in finishing operations. Tops, ends, fronts, backs, aprons, drawer fronts, in fact every component part had to be finished smoothly, richly, yet economically. All this without too high an initial expenditure for equipment.

Solution: A Gasway Model 32B Rollacoater was installed to operate in a production line consisting of the coater, drying ovens, and a printer for wood graining the parts. The coater was used to apply both prime and finish coats of lacquer.

Results: According to Superintendent, Walter J. Soltys, the number of rejects is running an average of 2 out of 700 Pieces or about 0.28%. Mr. Aaron Newman, Plant Manager, estimates that in approximately a five month period the savings inherent in this finishing operation equalled the cost of the rollercoating installation. Newman also reports that the finish obtained is more uniform and smoother than alternative methods. As a result of Colony's successful experience with rollercoating in the Linden plant, the company has converted to the same method in its original plant at Little Rock, Arkansas.

Perhaps you can make similar savings and get better finishing too by using Gasway equipment. Why not call us in today. We'll be glad to discuss your finishing problem with you.

Gasway CORPORATION

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SEND FOR COMPLETE FACT FILE ON ROLLACOATING

LOOK TO GASWAY FOR EFFICIENT HIGH PRODUCTION COATING OF STRIP, SHEET OR PANELS

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› Polishing
› Plating
› Paint Finishing

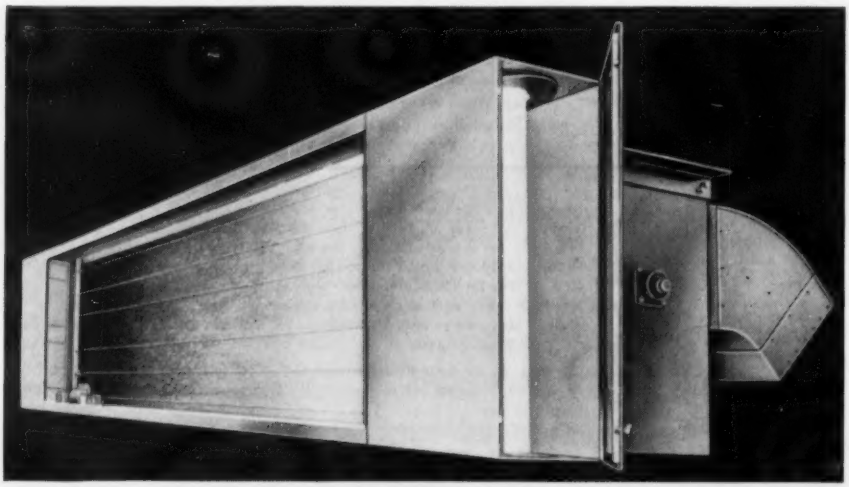
Automatic Air Filtration

A continuous glass fiber filter automatically filters air in American Air Filter Company's recently introduced Roll-O-Vent line of industrial unit heaters, heating and ventilating units and air conditioners.

The continuous glass fiber curtain moves horizontally through the entering air stream just ahead of the coils and fan sections. Fresh media is automatically supplied by an automatic timer to provide constant filter efficiency and automatic disposal of contaminated media.

Under normal operating conditions, the media would need replacing only once a year, the manufacturer states. The media is easily disposed of by removing the spool of dirty media and replacing it with a spool of clean media.

The basic Roll-O-Vent unit consists of a fan section, a coil section and the Roll-O-Vent automatic filter. Standard and non-freeze steam coils are avail-



American Air Filter Roll-O-Vent Air Filtration Unit automatically supplies fresh media

For more data on advertisement on opposite page, circle 351 on Reader Service Card ——→

PIONEERING QUALITY INDUSTRIAL FINISHES SINCE 1928

DEPENDABILITY–

"Worthy of being depended on; trustworthy, reliable."

(Webster's New International Dictionary)

CLINTON Dependability conforms to this definition–

TRY US AND SEE!

Customer Service is Our No. 1 Concern

THE CLINTON COMPANY

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able in a wide variety of sizes and capacities. Various accessories are also available to adapt the units to almost any given field condition. Among these are mixing dampers, face and by-pass dampers, intake dampers and others.

Further information is available by writing to Dept. P.D., American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

For more data circle **2** on Reader Service Card

★ ★ ★

Corrosion-Resistant Lining Material

A corrosion-resistant lining material for protecting metal components of chemical process systems has been developed by The Dow Chemical Company.

Called Saraloy 898, this lining is an elastomeric copolymer based on vinylidene chloride. It is a flexible thermoplastic, with excellent resistance to many acids, alkalis, salt solutions and solvents.

Saraloy 898 is supplied in 37-inch by 133-inch sheets and in from 1/16-inch through 3/16-inch thicknesses. It can be installed in the field or in an applicator's plant, using a chemically resistant Saraloy 898 adhesive system. There is no need for vulcanization after the material has been applied, and it has good strength and abrasion resistance, will not support combustion and

CUTS
finishing costs
80% OR MORE!
A REAL BOTTLE-NECK BREAKER
the NEW FUTURAMA SERIES
PRECISION BARREL FINISHING
Equipment Custom Styled for Modern Industry
...Will modernize and add exceptional efficiency to plant deburring and finishing departments. For high production needs or large work loads. Available in 3 model lines—with luxury features.
HINGED DOOR with quick-acting cam locks
Electronic CONTROL PANEL for absolute control
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PRECISION BARREL FINISHING
MT-37
THE WORLD'S MOST COMPLETE LINE OF PRECISION BARREL FINISHING EQUIPMENT & SUPPLIES
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Service is our most important product... Use it!
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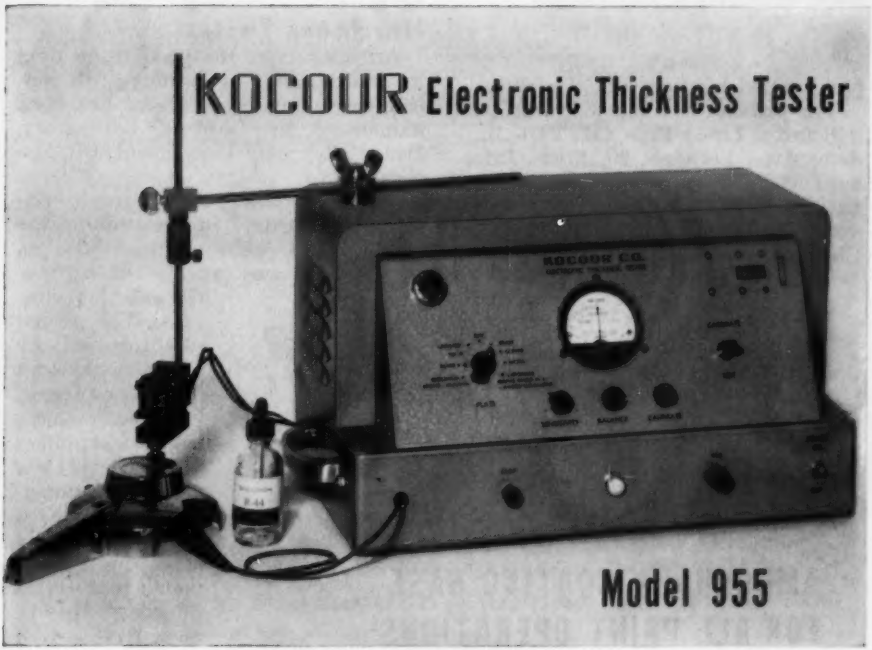

A NEW MODEL

To solve your plating thickness problems!

The importance of thickness testing cannot be over-estimated. However, the accuracy of a thickness test can be no better than the accuracy of the method used. Can you rely with confidence on the method you are now using? To what degree does the "human element" influence the accuracy of the results?

The Kocour Electronic Thickness Tester Model 955 will give you readings with an accuracy of 90-95%. Furthermore, with the new Calibration feature used in conjunction with Kocour Thickness Standards, you cannot only check the accuracy, but calibrate the instrument to correct slightly high or low readings. A plating selector switch indicates all of the commonly plated metals which can be tested on various basis metals and materials . . . human error is virtually eliminated by the automatic operation . . . readings are direct . . . results are reproducible . . . average test requires about one minute.

These features add up to a dependable instrument which will solve your problems efficiently, accurately and quickly. Write for further details today!

Ask for a demonstration or 15-day Free Trial.

KOCOUR CO.

Pioneers in Control for the Plating Industry

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For more data circle **353** on Reader Service Card

has high elongation and flexibility.

The product is being distributed by the Saran Lined Pipe Co., 2415 Burdette Ave., Ferndale 20, Mich. Information on the properties and recommended methods of application is available from plastics sales, The Dow Chemical Co., Midland, Mich.

For more data circle 3 on Reader Service Card

Organic Coating Hardness Tester

An instrument designed to be used in determining the hardness of nonconductive organic coatings has been announced by Gardner Laboratory, Inc., 5521 Landy Lane, Dept. PF, Bethesda, Md.

This instrument was originally designed to be used in determining the surface hardness of coatings used on beverage crowns and continuous-thread jar closures. The principles involved are applicable to other shapes and forms, however.

The instrument is basically a means of automatically applying a load of uniformly increasing increments to a stylus moving slowly away from a fixed center of the test specimen toward the periphery while the specimen is being rotated at a fixed speed. The stylus is held by a dielectric holder and is connected to the control grid of a thyratron tube. When the coating is pierced by the stylus, grounding of the control grid of the thyratron tube operates a relay in the plate circuit and the drive motor is stopped. The

Metabond

AMORPHOUS COATING BASE FOR ALL PAINT OPERATIONS

The smooth and tightly bonded surface coating of METABOND produces a base for greater lustre and *provides added beauty for the finished product . . .* thus increasing the sales appeal. METABOND is guaranteed not to crack, chip or peel during distortion or deformation.

For all painted surfaces METABOND is endorsed by industrial users everywhere as the outstanding preparation agent on the market today. Investigate the advantages of METABOND.

As an added customer service we will furnish METABOND samples on *your own products* from our research laboratories and provide you with complete comparison tests—without obligation!

INTERNATIONAL RUSTPROOF CORPORATION
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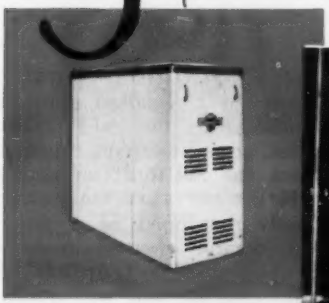
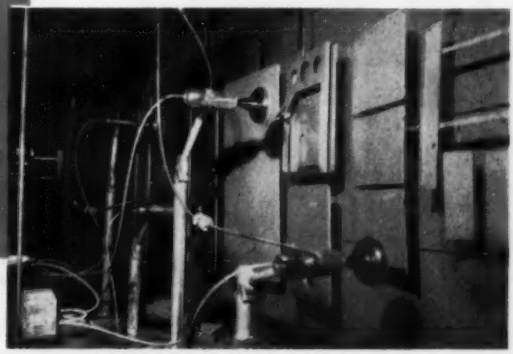
For more data circle 354 on Reader Service Card

3 times as many Furnace Casings per gallon of paint with RANSBURG NO. 2 PROCESS!





This Lo Boy model, Series 6000, is typical of the Waterman-Waterbury line of winter air conditioners now painted electrostatically.

Quality of work is improved; Labor costs are cut and Production Stepped up 150% with

RANSBURG Electrostatic Spray Painting

Results exceeded expectations when Waterman-Waterbury, Minneapolis, modernized their finishing department and went from hand spray to Ransburg No. 2 Process in painting their quality line of heating and air conditioning equipment.

By the former hand spray method, W-W used a half gallon of paint to coat a single casing. Now, with Ransburg No. 2, they get SIX CASINGS PER GALLON . . . or 3 times as many per gallon. Furnace casings, as well as other painted parts which go into the famous Waterbury Furnaces, now get a uniform coating of .8-mil.

Production was increased, too, as automatic painting enabled them to step up the conveyor speed from 7 fpm to 11½ fpm. Where they formerly turned out a complete furnace in five minutes, NOW they assemble three in just six minutes . . . an increase of 150%. All in all, they figure the modernization program—with Electro-Coating—saved over $11,000 in the first three months of operation.

NO REASON WHY YOU CAN'T DO IT TOO!

Whatever you paint, we'd like to tell you more about the efficiencies and worthwhile savings which can be yours with Ransburg Electro-Coating Processes. Get our No. 2 Process brochure which cites many on-the-job examples of electrostatic spray painting on a wide variety of products. Or, we'll be happy to loan you our new film, "The Big Attraction" which tells the electrostatic spray painting story in sound and full color. Call or write

RANSBURG
Electro-Coating Corp.
Barth and Sanders, Indianapolis 7, Indiana

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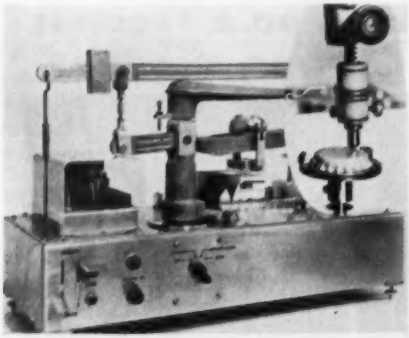


Gardner-Albrecht Coating Hardness Tester

load in grams required to break through the coating is read from the instrument scale.

The Gardner-Albrecht Coating Hardness Tester is said to eliminate the "human factor" in making such tests. It is said to be particularly advantageous in testing coatings applied on curved surfaces.

For more data circle **4** on Reader Service Card

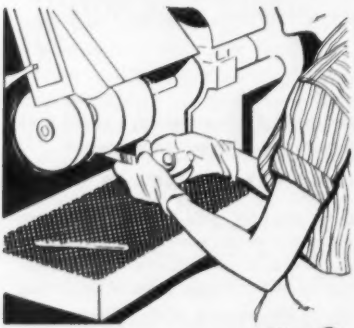
★ ★ ★

Thicker Rhodium Deposit

An extra-heavy rhodium plate can be produced using the Sel-Rex Rhodex process, according to an announcement from the Sel-Rex Corporation, Nutley, N. J.

Originally developed as a process for the production of a compressively stressed rhodium electroplate, the heavier deposits possible with Rhodex were discovered during experimentation intended to increase the friction-wear resistance of rhodium plated commutator discs and switch plates. Sel-Rex electrochemists state that they have consistently produced Rhodex electroplates in thicknesses exceeding

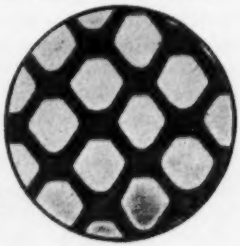
PROTECT FINE PLATED SURFACES



with **RP** *Neotex*

Neotex . . . the open pattern Neoprene rubber matting, protects highly polished finishes when used to line any surface where goods are worked on or in transit. In roll form, Neotex can be easily cut to any size or shape . . . it's rugged and long lasting, resistant to abrasives, caustics, heat, acids, oils, oxidation. Open pattern permits buffing compounds to settle. Available in a fine or coarse pattern. Write for complete information.

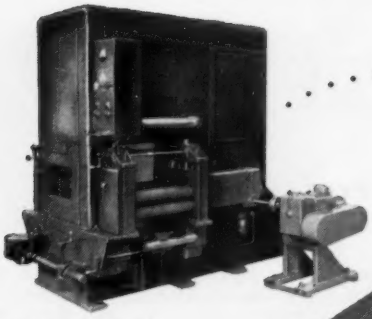
RP Neotex



RESEARCH PRODUCTS CORPORATION

Dept. 76, Madison 10, Wis.

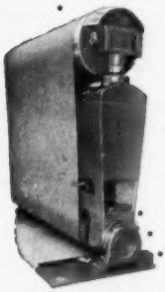
For more data circle **356** on Reader Service Card



ABRASIVE BELT GRINDING & POLISHING MACHINE
(Pinch Roll Type)

For pre-finishing, conditioning and polishing sheets, plates, strips or blanked-out shapes in flat form. Used as single units or in multiple units for progressive line polishing.

for FINISHES that pass inspection the FIRST TIME get a HILL Grinding & Polishing Machine



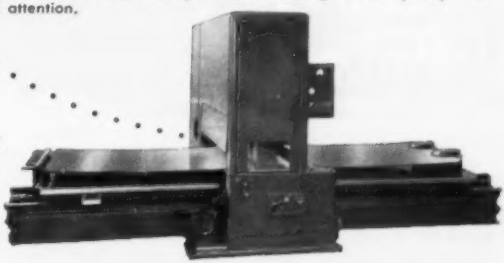
The basic HILL two-roll vertical head with endless abrasive belt. Used in both the Pinch-Roll and the Hydraulic Table types.

● HILL 2-ROLL Vertical Abrasive Belt Grinding and Polishing Machines are made in two general types for producing superior finishes on flat surfaces as required by manufacturers of a wide variety of products such as decorative plastics, auto bumpers, engravers plates, home appliances, etc.

Both types are built in polishing widths up to 60" and larger sizes can be furnished if desired. Your problem will be given our prompt and careful attention.

ABRASIVE BELT POLISHING MACHINE
(Hydraulic Table Type)

For flat polishing of sheets and plates of ferrous and non-ferrous metals. Made in a variety of table widths and lengths with full hydraulic reciprocating table.



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"HILL" GRINDING & POLISHING MACHINES • HYDRAULIC SURFACE GRINDERS • ALSO MANUFACTURERS OF "ACME" FORGING THREADING • TAPPING MACHINES • "CANTON" ALLIGATOR SHEARS • BILLET SHEARS • "CLEVELAND" KNIVES • SHEAR BLADES

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0.001 inch. They report that the thickness to which Rhodex can be successfully plated appears to be limited only by cost considerations.

The extra-heavy deposits are expected to be of interest where, in addition to the well-known metallurgical properties of rhodium, exceptionally high resistance to friction-wear is required.

Literature on Sel-Rex Rhodex is available from Sel-Rex Corporation, 75 River Rd., Nutley 10, N. J.

For more data circle **5** on Reader Service Card

★ ★ ★

Prevention of "Spotting Out"

Materials that are said to be successful in solving the "spotting out" problem (see editorial, "Spotting Out —An Old Problem Is Still With Us," page 21, February, 1957, PRODUCTS FINISHING) are made by MacDermid, Inc., Waterbury 20, Conn.

The MacDermid Cyanide Spotting Out Materials are designed to be used in combination with MacDermid Rinsing Aids to eliminate the spotting out problems common to all types of cyanide plating.

One of the materials formulated to solve this problem is called Pyrotex. It is a water-soluble chromate-free dry acid powder. The cyanide-plated work must be rinsed before and after treatment with this material. One ounce of Pyrotex per gallon of water is used. The solution is operated at room temperature.

CLEPCO Quartz Paint Ovens are based on the use of special CLEPCO Quartz Heaters designed to emit that part of the heat spectrum most readily absorbed by paints.

Another major auto manufacturer reports that CLEPCO Paint Ovens are lower in original cost as well as in operating costs than the conventional gas fired convection ovens previously in use.

CLEPCO'S Complete Research Facilities are at your service to determine the most efficient quartz oven for your requirements.

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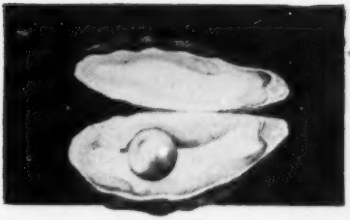

How to add the beauty of PEARL to your finish with NACROMER®

It's easy! Simply by adding a small amount of Nacromer to your regular coating material*, you add a beautiful pearl-like lustre to your finish. The range of effects that can be achieved by also adding transparent pigments or dyes is amazing. For example, it is being used to get beautiful gun metal, gold and silver finishes. It transforms the character of standard colors to achieve unique effects. Nacromer will make a finish that will enhance the beauty of your product . . . increase its sales-appeal!

From a cost viewpoint, Nacromer is practical. You use your present method of application – brush, spray, or dip – without additional labor or equipment required. And, because only a small quantity of Nacromer is necessary, and, the cost of the Nacromer is so low, the added cost is negligible.

Nacromer is versatile, too! You can use Nacromer on practically any material – wood, metal, plastic, leather, and paper are just a few. Nacromer is permanent and safe!

If eye-appeal plays an important role in the sale of your product, you can benefit from the distinctive, different kind of pearl-like finish Nacromer gives. A demonstration sample will show you the difference Nacromer makes on the same kind of material you use – just mail the coupon to get your sample.

*Nacromer is not suitable for use in pigmented enamels, high temperature bake-type synthetic resins containing formaldehyde, or paints. It is suitable for use over these coatings in a clear enamel or lacquer.

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Please send a demonstration sample of a Nacromer finish on

☐ wood ☐ metal ☐ plastic ☐ other

Name..... Title.....

Company.....

Address.....

City..... State.....

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The cycle suggested for using this material is as follows:

1. Cyanide plate.
2. Cold water rinse.
3. Pyrotex rinse.
4. Cold water rinse.
5. Hot water rinse with MacDermid Rinse Aid.

Another material that may be used to prevent "spotting out" is called Metex M-622. An acidic chromate-base liquid, it is used at concentrations of ¼ to 1 per cent by volume in hot or cold water. The work must be rinsed free of cyanide prior to treatment with Metex M-622. Where space limitations permit the use of only one material in the plating cycle, Metex M-622 may be used in the final hot or cold water rinse.

The treatment cycle recommended is as follows:

1. Cyanide plate.
2. Cold water rinse.
3. Metex M-622 rinse.*
4. Cold water rinse.*
5. Hot water rinse with MacDermid Rinse Aid.

Metex M-622 also may be used in burnishing barrels to prevent "spotting out" and impart mild tarnish resistance. In this application, it is used after the work is thoroughly rinsed, following the final color operation. The suggested cycle for this process is as follows:

1. Final color roll with MacDermid Burnishing Compound.
2. Water rinse.
3. Roll 10 to 20 seconds in ¼ per cent by volume Metex M-622 in cold water.
4. Dry in the usual manner.

Metex M-622 and Pyrotex should be prepared fresh daily and used in

*If equipment is limited, these steps can be eliminated and Metex M-622 used only in the final water rinse.

get the new booklet on BARREL FINISHING

Abbott's new booklet gives the latest information on barrel finishing by the Abbott Method. It describes equipment and materials and how to use them. *The abbot* introduces to barrel finishers the new Abbott Welded Steel Barrel—now available for the first time. The booklet, ***"The Abbott Method of Barrel Finishing,"*** is a must for methods engineers and production men everywhere.

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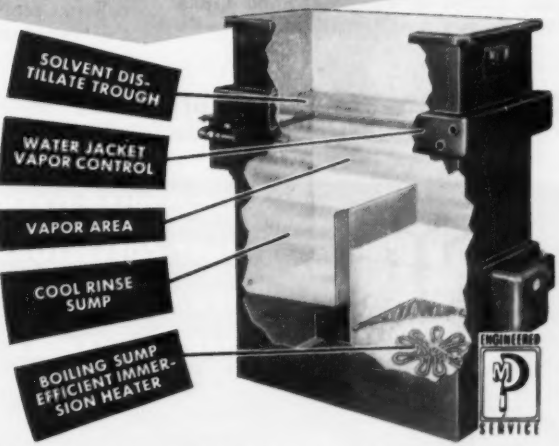
Now any plant can have production vapor degreasing



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This vapor degreasing economy may be just what you're looking for. With such a low original investment it is possible for every plant to have vapor degreasing—the *modern* metal cleaning method.

The 100 CS is a *complete* degreaser. You get cool and hot rinse, along with vapor degreasing. In addition, the 100 CS also operates as a solvent recovery still at seven gallons per hour. (This rate is based on a 30% contamination of solvent).

The Phillips 100 CS operates economically on either a *continuous or intermittent basis, handling many production or maintenance jobs quickly and inexpensively.* Check into this low cost unit today.

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All essential information on 100 CS specifications and electrical characteristics.

ASK FOR DETAILS ON OUR NEW LEASE-PLAN FOR VAPOR DEGREASERS

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STANDARD and HEAVY DUTY ELECTRIC, STEAM, and GAS, VAPOR DEGREASERS
POWER AND SURGE WASHERS • SPECIAL CLEANING EQUIPMENT

For more data circle 361 on Reader Service Card

conjunction with MacDermid Rinsing Aids to secure optimum results. Both materials may be used in steel, Fiberglas, rubber or Koroseal-lined tanks.
For more data circle **6** on Reader Service Card

★ ★ ★

Clear Primer for Plastisol

A clear primer for use under plastisols has been developed by the Stanley Chemical Company, a subsidiary of The Stanley Works, East Berlin, Conn.

Baked or air-dried, Stanley No. 69X-1406 clear primer produces excellent plastisol adhesion on metal, the company states. The primer is transparent and colorless. It can be used under clear plastisol and for other applications where a colored primer would be objectionable.

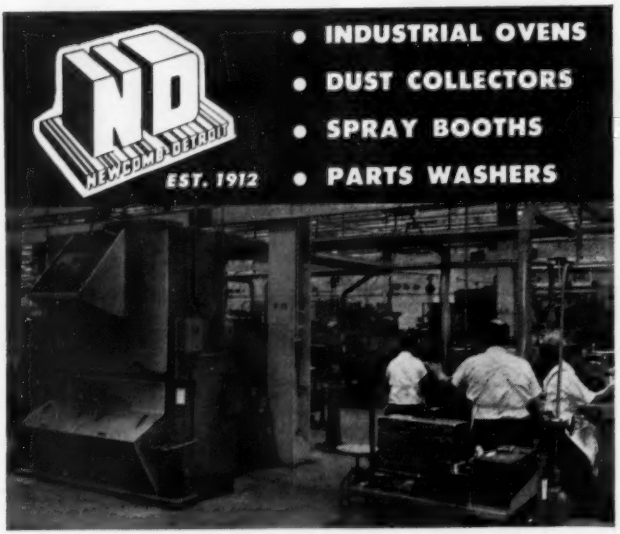
Colored variations of the primer are also available. White primer No. 67X-832 gives good humidity and hot water resistance. Yellow primer No. 66X-5457 is recommended where resistance to corrosion and corrosion creep is required.
For more data circle **7** on Reader Service Card

★ ★ ★

Zinc Brightener

A zinc brightener called "Zinc-Kote" has been introduced by Smoothex Corp., 10705 Briggs Rd., Cleveland 11, O.

Zinc-Kote, when added to a barrel plating bath is said to produce brilliant zinc deposits. Bright plating is done directly from the bath, without subsequent treatments.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Compact, complete recirculating Water-Type Dust Collectors for industrial processing dusts. Dirt is collected as wet sludge which may be carried away automatically. No moving parts. Extremely efficient for grinding operations. Eliminates danger of explosion from magnesium and aluminum dust. Proven in foundries. Standard Units available.
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We engineer your finishing problems

For more data circle **363** on Reader Service Card

The zinc deposits formed by the use of Zinc-Kote are said to provide an excellent underseal for subsequent finishes and to protect the parts from rust and corrosion at the same time. A good foundation is also provided for chromate finishing and bonderizing.

Plating current required ranges from 60 to 90 amperes per square foot, depending upon the type of work being processed.

Because it is a non-metallic addition agent, it is compatible and effective in all zinc barrel solutions.

For more data circle **8** on Reader Service Card

★ ★ ★

Spray Gun Receiver

The Protectoseal Paint Spray Gun Receiver keeps the nozzle tip of a spray gun in a solvent solution when the gun is not in use. This prevents paint from hardening in the opening. Only the nozzle tip is in the solution. Packing is kept away from liquid and vapor. The gun is held securely in the receiver, with hoses still attached, and is always ready for use.

A reservoir tank keeps a constant liquid level in the receiver. The perforated metal fire baffle in the gun port opening prevents ignition of the solvent in the spray gun receiver from exterior sources of ignition.

Single gun receivers are located in the position most convenient to the operator. Multiple gun receivers are also available. There is considerable dimensional variance in the spray

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Plastics
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Here are typical Harshaw chemical products

Electroplating Salts, Anodes and Processes
Organic and Inorganic Dry Colors and Dispersions
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Vinyl Stabilizers
Ceramic Opacifiers and Colors
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Glycerine
Preformed Catalysts, Catalytic Chemicals
Synthetic Optical Crystals
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Fungicides
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FREE! This 16-page booklet lists the many chemicals available from Harshaw.

WRITE TODAY FOR YOUR COPY

For more data circle **365** on Reader Service Card

Protectoseal's Spray Gun Receiver prevents paint from hardening in nozzles. Inset shows a similar receiver for hose connectors.

guns manufactured by the leading companies and in ordering it is necessary to give the name of the maker, model number and air cap number.

Protectoseal also makes a similar receiver for use in caring for quick connectors. Similar in principle to the spray gun receiver, these receivers keep the paint hose connectors in solvent when they are not in use, thus preventing paint hardening at these critical points. The change from one paint line to another can be made quickly, with a minimum of delay.

Further information on these spraying accessories is available from the Protectoseal Co., 1920 S. Western Ave., Chicago 8, Ill.

For more data circle **9** on Reader Service Card

★ ★ ★

Synthetic Rubber Enamel

Pliogard, a synthetic rubber enamel for protecting the finish on hydraulically operated equipment, has recently been introduced by the Saran Protective Coatings Co., 2415 Burdette Ave., Ferndale 20, Mich.

Another fine product made finer . . .
with the PARAMOUNT "Finishing Touch"
Colonial Brass Company has been a leading producer of bronze and aluminum memorial plaques, nameplates, sundials and other cast metal specialties since 1847. "We found out long ago," says Colonial's Mr. J. A. Davis, "that only Paramount felt wheels can produce a fine uniform finish on lettering, designs and other highlights without rounding off sharp edges. And Paramount Wheels are available in such a wide range of densities we can select a type exactly right for each metal we work with."
Your products, too, deserve the fine finish only Paramount Bobs and Wheels can produce. Discover how easy and economical it is to get the finest finishes — call your Paramount supply house today.
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Bacon Felt Co. 447 West Water St., Taunton, Mass.

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Rutley compounds are expressly developed to meet the specialized needs of the metal finishing industry. *Specialized know-how* is the intangible ingredient that makes *Rutley* compounds outstanding for quality and performance. They meet the highest standards for metal cleaning, burnishing and tumbling. This specialized know-how is just *one* of the many reasons why Rutley compounds do their work faster and better at less cost.

If you have a special problem why not let a Rutley technician help you solve it. For further information write for Rutley ***Bulletin P-1.***

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BALL BURNISHING and TUMBLING FORMULA
producing superior color, lustre and finish on Zinc Die Castings.

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New Liquid
BURNISHING COMPOUND
assures highest quality finish on Aluminum, Zinc, Brass and Steel.

DC-102
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Specially prepared formula for Zinc Die Castings, Brass, Steel and White Metal.

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One of a series of "Rutley–Toons." 8½x11 reproduction FREE on request.
For more data circle **367** on Reader Service Card

Most hydraulic fluids are corrosive in their nature and attack and destroy protective and decorative paints and enamels. Pliogard, it is said, eliminates most trouble caused by non-flammable hydraulic fluids.

Pliogard is a high solids, chemical-resistant, synthetic rubber coating made from styrene-butadiene resins. It air dries in 30 minutes. No primer is necessary and application can be made by spray, brush, dip or roller.

Pliogard is a thermoplastic coating and is non-oxidizing. It withstands temperatures up to 250 deg. F.

For more data circle **10** on Reader Service Card

★ ★ ★

Hot Spray Heater

The Spee-Flo Company, Houston, Texas, has announced the "Viscomatic" Hot Spray heater, which incorporates "Dial-a-Matic" temperature and viscosity control.

With this unit, temperature and viscosity control settings can be made on an external dial, even while the unit is operating.

The Spee-Flo "Viscomatic" heater is adjusted to the material being used. It heats paint to any temperature from 90 deg. F. to 180 deg. F.

All standard paints as well as specially formulated hot spray materials are handled with equal ease, the manufacturer states.

The "Viscomatic" heater incorporates a sensitive fluid temperature controller, thermometer, and a fluid passage-way through which the paint

Aircon VAPOR DEGREASERS

ANY SIZE . . .
Standard or Custom

Aircon Vapor Degreasing Systems are available in a complete line, ranging in size, from the smaller bench and barrel-type units to the larger, permanent, high capacity degreasers.

Aircon Degreasers are:

- GAS, ELECTRIC OR STEAM HEATED
- COMPLETE UNITS WITH ALL SAFETY EQUIPMENT

NO EXTRAS TO BUY!

Write today for full information

WE ARE DESIGNERS AND ENGINEERS OF SPECIAL DEGREASING EQUIPMENT. CONSULT US ON YOUR DEGREASING PROBLEMS.

Armstrong & White
CHESWICK, PENNSYLVANIA

For more data circle **368** on Reader Service Card

The Leading Name in Immersion Heating

THERE'S A **Glo-QUARTZ*** **IMMERSION HEATER** for YOUR EVERY **HEATING REQUIREMENT**

All **3** Types

- INSTANT HEATING
- SHORT-PROOF
- AVAILABLE IN ALL VOLTAGES—WATTAGES, one and three phase
- STOCKED FOR IMMEDIATE SHIPMENT

TYPE "U"
PATENT PENDING
World's **first** successful U-tube **ACID** Heater—Guaranteed to outperform and outlast all other quartz heaters.

TYPE "GN"
Pat. No. 2,740,881
Standard straight tube Quartz **ACID** Heater—Vapor-proof junction box; replaceable heating element.

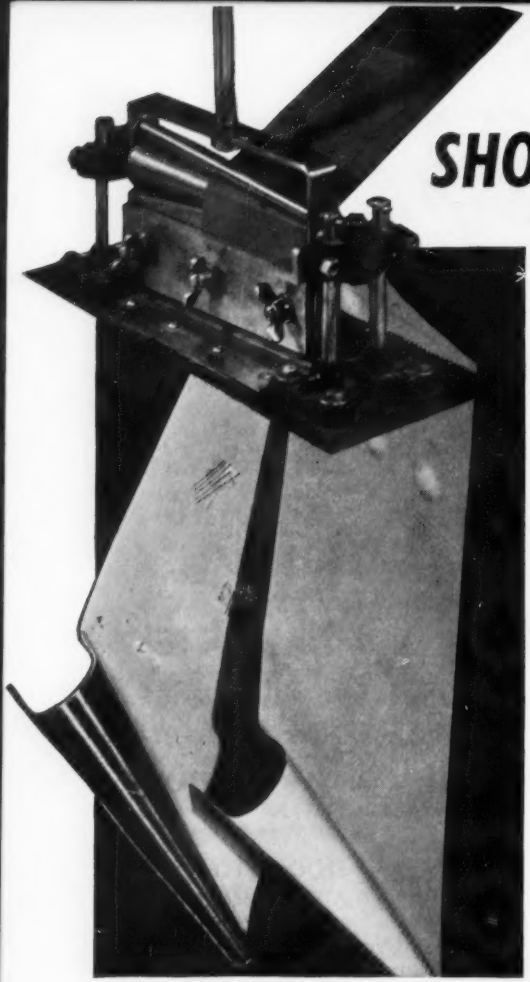
TYPE "MB"
"Multi-Blade", Metal-sheathed **ALKALI** Heater—Portable, burn-out proof, easy mounting, long life.

WRITE FOR BULLETIN

If you're looking for
ACCURACY—EFFICIENCY—LONG LIFE—and ECONOMY
...you'll get it with Glo-QUARTZ!
Available from your Electroplating Distributor!

Glo-QUARTZ ELECTRIC HEATER CO., INC.
*Trademark Reg. U.S. Pat. Off.
WILLOUGHBY, OHIO
Phone Willoughby 2-5521

For more data circle 369 on Reader Service Card



The conical mandrel test evaluates the flexibility and adhesion of paint on metal surfaces by severely bending and stretching a painted metal panel between conical rollers. Lowe Brothers FEUZON—baking enamel used on the right hand panel withstood this abuse without peeling, breaking or cracking. The competitive enamel on the other panel, could not stand this abuse.

SHOCK TREATMENT

..bad medicine for the wrong finish

You can't afford to use anything but the right finish. The second best might be cheaper and look just as good, but it will be more costly in the long run.

The "shock" will come after your product goes into home, office or plant. The finish must not only look good but also be able to take wear and abuse.

The "shock treatment," more severe than any encountered in actual service, is simulated in Lowe Brothers Technical Service Laboratory to determine in advance the reliability of each finish. The two test panels at the left which have been bent and stretched, graphically emphasize that the best paint is the most economical finish in the long run.

To make sure you get the right finish everytime, call or write Lowe Brothers Company, 424 East Third Street, Dayton 2, Ohio.

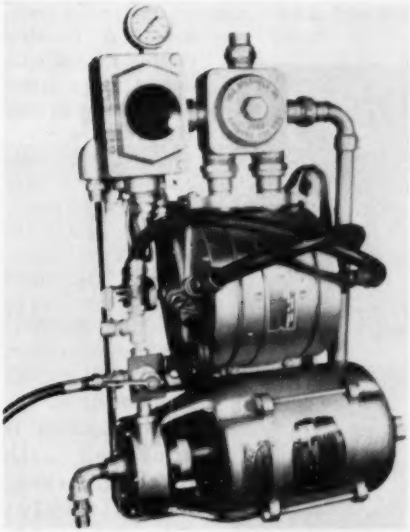
LOWE BROTHERS
INDUSTRIAL FINISHES

also Style-Tested paints for the home

For more data circle **370** on Reader Service Card

is circulated. This model also has a centrifugal pump that has no gears or close tolerances; and the Spee-Flo "coil-less" heat exchanger, which requires no clean-out or special maintenance, the manufacturer states.

Spee-Flo has released a new edition



Spee-Flo Viscomatic Hot Spray Heater: "Dialamatic" temperature and viscosity control

of the booklet "Why Hot Spray?" in which the advantages of hot spray application are detailed with pictures and case histories. The booklet is available from Spee-Flo, Dept. PF-28, 720 Polk, Houston 2, Texas.

For more data circle 11 on Reader Service Card

★ ★ ★

Paint Storage Cabinet

A paint-storage cabinet recently introduced by Industrial Equipment Co., 305 Mt. Eden Ave., Bronx 57, N. Y., is designed to store paints with the greatest possible safety.

The cabinet has double-walled sheet metal construction, natural ventilation and a self-closing door. It is constructed so as to be suitable for storage of paints, solvents, oils, and other finishing supplies.

Several sizes are available, the smallest being large enough to store eight five-gallon cans.

For more data circle 12 on Reader Service Card

★ ★ ★

Vacuum Coater

A vacuum coater for laboratory, pilot plant, and limited production use, is available from the Rochester Division of Consolidated Electrodynamics Corporation. Designed primarily for laboratory coating of various materials with vaporized metals, this unit is known as the Type LCl-18A Vacuum System. It incorporates a high-

Consolidated Electrodynamics' Vacuum Coater: for lab, pilot plant, limited production

capacity pumping system, which reduces pumping time. A complete line of accessories is available.

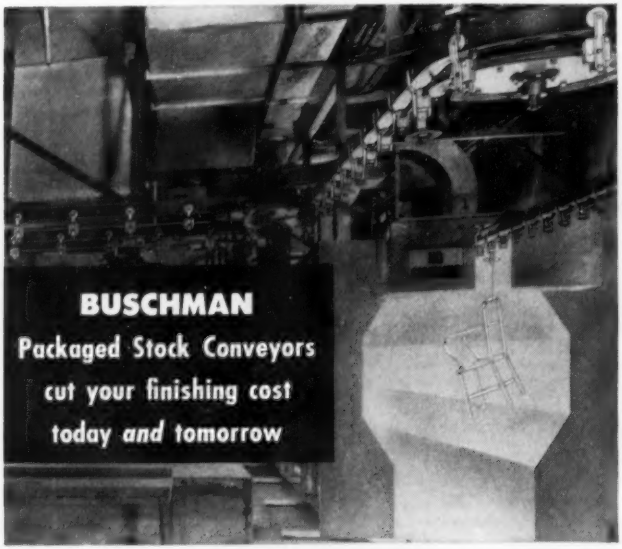
The pumping system includes a three-stage oil diffusion pump and affords a choice of 13-, 15-, 27-, or 130-c.f.m. mechanical pumps for roughing and backing. Pumps are operated by circuit breakers and are interlocked to prevent improper sequencing.

Pump-down time with a clean, dry system is five minutes to 0.5 micron Hg, with an ultimate pressure of 3 x 10^{-5} mm Hg. With a fractionating oil diffusion pump substituted for the three-stage pump, an ultimate pressure of 3 x 10^{-6} mm Hg can be reached. Pressures in the work chamber and fore-pressure lines are measured by discharge and Pirani gauges from 2 mm to 1 x 10^{-7} mm Hg. A special leak detection feature of this Pirani will detect leaks from 1 micron to 10 mm Hg pressure.

An 18- by 30-inch Pyrex bell jar is the work chamber. It seats on a base-plate which has holes for vacuum-gage sensing tubes, filament heating electrodes, and optional accessories.

The system is equipped with roughing, backing, and air inlet valves, in addition to a water-cooled combination valve and baffle located above the diffusion pump to minimize backstreaming of oil vapors.

Additional information on the LCI-18A appears in Data Sheet No. 2-20, available from Rochester Division, Consolidated Electrody-



Buschman BUSH-LOCK "Universal" Overhead Cable Conveyors make your production and finishing processes more profitable today . . . easily convertible to meet the changing needs of tomorrow. Standard stocked parts . . . right down to the exclusive BUSH-LOCK Trolleys and compact Drive Unit . . . pre-engineered to give you a conveyor system tailored to your plant needs. Let cost-cutting Buschman Conveyors move your products and components smoothly throughout the plant.

Write for bulletin No. 41

Buschman will cooperate with industrial washer or oven equipment manufacturers whenever your plant is being surveyed.

PRODUCE MORE FOR LESS
Buschman
CONVEYORS

THE E. W. BUSCHMAN CO.
4516 Clifton Ave., Cincinnati 32, Ohio

C-334-EWB

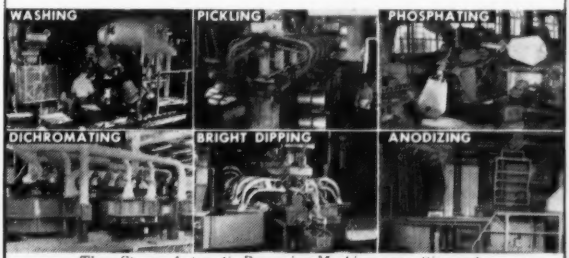
For more data circle **371** on Reader Service Card

THE FINISHING TOUCH

A. B. HOEFER, *Vice-President*, FREDERIC B. STEVENS, INC.

AUTOMATIC IMMERSION PROCESSING RESULTS IN REAL SAVINGS!

MORE AND MORE, PROCESS ENGINEERS are recognizing the money savings to be realized from automatic processing installations, i.e. *Anodizing and other aluminum immersion treatments; Blackening; Bright Dipping; Dichromating; Cleaning; Pickling; Washing; Phosphating* for rust prevention; wear resistance, and prior to cold drawing; *Stripping* as well as *Electroplating.*



These Stevens Automatic Processing Machines are cutting costs.

"PROFIT-MAKING MACHINES" was one term recently used by a Stevens Automatic Machine user. Money saved in labor, floor space, production control and similar costs, if tacked on the other end, could very easily be termed "profit."

IN ANALYZING AUTOMATIC MACHINE USERS at Stevens for the past three years we were interested in the increased number of processing applications which manufacturers are adapting to this versatile equipment.

AUTOMATION HAS INFLUENCED THESE INCREASES, for our automatic machines fit ideally into "straight line" production layouts and eliminate handling and human error so costly in today's modern manufacturing techniques. All of our machines can be equipped with automatic load and unload features and have flexibility which enables them to be used for a variety of metal treatments.

IF YOU ARE A PROCESS ENGINEER, or occupy a similar post of responsibility in your plant, contact your Stevens sales engineer or write for more information on automatic immersion processing as well as electroplating. Let us show you how you can recommend methods to save your company money. Write: Frederic B. Stevens, Inc., 1800 Eighteenth Street, Detroit 16, Michigan.

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YOUR METAL FINISHING SUPERMARKET
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CUT YOUR BUFFING COSTS WITH STEVENS LIQUID COMPOSITIONS

Stevens Laboratories have developed many new liquid buffing compositions for aluminum, zinc, copper, brass, nickel and stainless steel.

These safe, stable nonflammable liquid compositions are available in many grades to meet all cutting requirements.

Stevens Liquid Compositions increase buff life . . . reduce compound waste . . . cut labor costs.

Let us demonstrate how Stevens Liquid Compositions will work for you. Write Frederic B. Stevens, Inc., 1800 18th Street, Detroit 16, Michigan.

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DETROIT 16, MICHIGAN

For more data circle **372** on Reader Service Card

namics Corporation, 1775 Mt. Read Boulevard, Rochester 3, New York.
For more data circle **13** on Reader Service Card

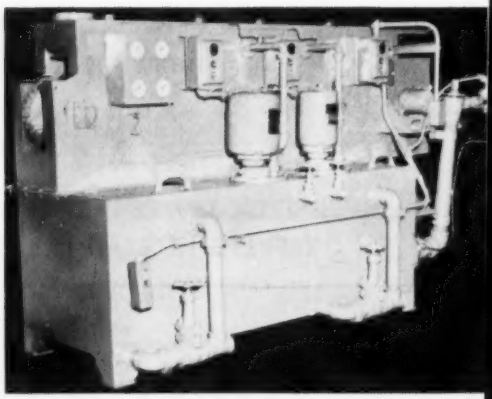
★ ★ ★

Washing Machine

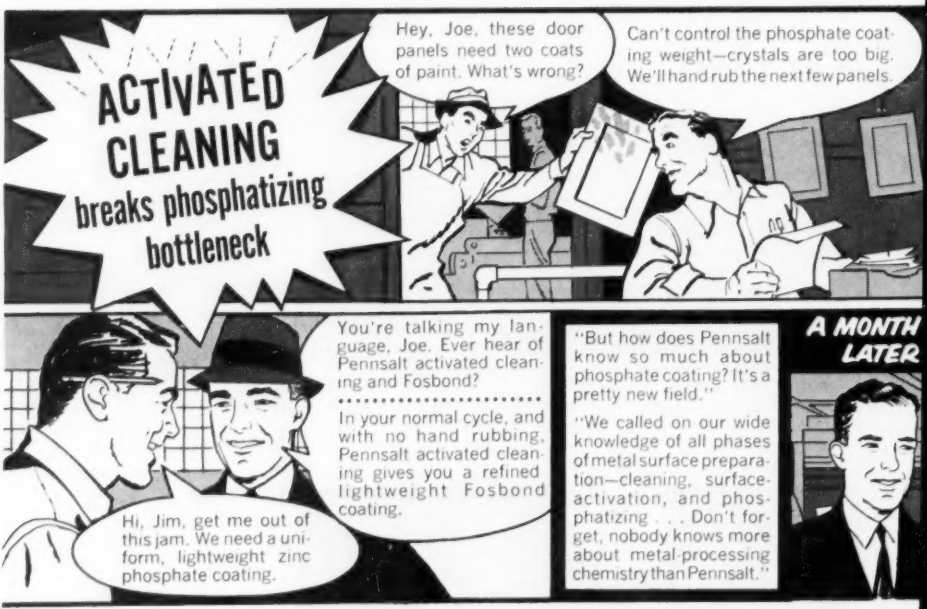
A parts washer that removes chips, filings, oil and grease from work parts delivered by a conveyor has been announced by Industrial Systems Co., Dept. CH, Matawan, N. J.

This Industrial washer employs a metal mesh conveyor to carry the work parts through powerful sprays of heated detergent solution. This step is followed by a hot rinsing spray. The cleaned parts are then discharged from the machine, ready for the next operation.

The machine processes parts up to six inches by three inches. Designated Model CT 6 x 3 WR, it is normally heated by gas, but may be adapted for steam or electricity. It is often used to clean parts after screw machine operations. The unit also may be connected to turret lathes and other ma-



Conveyorized Industrial Washing Machine for cleaning parts after machining operations


ACTIVATED CLEANING breaks phosphatizing bottleneck
Hey, Joe, these door panels need two coats of paint. What's wrong?
Can't control the phosphate coating weight—crystals are too big. We'll hand rub the next few panels.
You're talking my language, Joe. Ever hear of Pennsalt activated cleaning and Fosbond?
In your normal cycle, and with no hand rubbing, Pennsalt activated cleaning gives you a refined lightweight Fosbond coating.
Hi, Jim, get me out of this jam. We need a uniform, lightweight zinc phosphate coating.
"But how does Pennsalt know so much about phosphate coating? It's a pretty new field."
"We called on our wide knowledge of all phases of metal surface preparation—cleaning, surface-activation, and phosphatizing . . . Don't forget, nobody knows more about metal-processing chemistry than Pennsalt."
A MONTH LATER

chining operations by multiple collecting floor conveyors.

For more data circle **14** on Reader Service Card

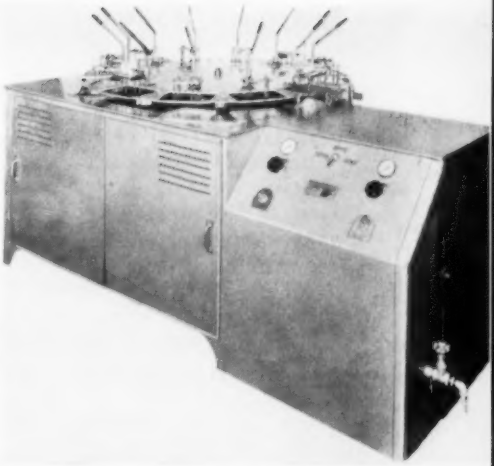
★ ★ ★

Automatic Spray Painting Machine

An automatic reciprocating-type spray painting machine with a rotary mask fixture mechanism, recently announced by Conforming Matrix Corporation, will be of interest to those who decorate parts with slow drying paints or heavy viscous materials, where quick drying is an important factor.

The part, which may be dried by infrared lamps or other means of forced drying, can be handled, stacked or assembled immediately after removal from the machine.

Paint that accumulates on the mask is set up between shots, thereby eliminating the need of frequent mask washing to prevent wet materials transferring to the part being painted. Masks, accordingly, can be used until



Conforming Matrix Automatic Spray Painting Machine: for applying slow drying materials

Huh, the coating is refined when we rub the panels, but we can't do that in production. I've gotta do without hand rubbing.
Here's Jim Keers from Pennsalt.
Swell, Jim! Crystal structure is even more uniform than we were getting that day by rubbing the parts. Paint's tight and glossy—even with one coat. And my costs—way down!

Learn the important relationship between Pennsalt activated cleaning and effective phosphate coating. Send the coupon for information on Fosbond® phosphate coatings. . ."A BETTER START FOR YOUR FINISH."

Pennsalt Chemicals

Metal Processing Dept. 490
Pennsalt Chemicals
3 Penn Center, Philadelphia 2, Pa.

Send information on Pennsalt ☐ phosphate coatings ☐ metal cleaners ☐ cold-working lubricants

Name_____ Title_____

Company_____

Address_____

City_____ Zone_____ State_____

For more data circle **373** on Reader Service Card

shadowing occurs. One operator is required for loading, unloading, and drying operations.

The machine can be furnished with as many stations as desired.

Working parts are totally enclosed. A self-contained exhaust system makes the use of a spray booth unnecessary.

Descriptive literature is available from Conforming Matrix Corporation, 356 Toledo Factories Bldg., Toledo 2, Ohio.

For more data circle **15** on Reader Service Card

★ ★ ★

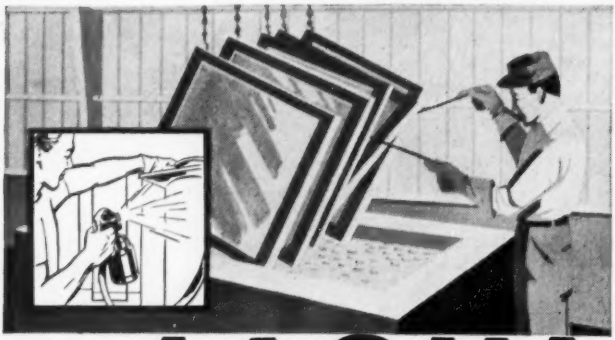
Fixture-Type Deburring Machine

A fixture-type deburring machine called the Reciprotron has been introduced by the Metal Parts Sales Co., 165 Delancey St., Newark, N. J.

This machine is designed to be used for deburring, polishing, micro-inch finishing, and generating radii on machined parts. Primary advantage of the machine is said to be its use of fixtures, which allows parts to be finished without the nicking and marring caused by parts contacting each other.

To operate the machine, parts are attached to quick - releasing rack holders. The rack holders are attached to reciprocating drive shafts. These drive shafts, powered by a three-h.p. motor, reciprocate at from 90 to 380 strokes per minute. A pan containing the proper abrasive or polishing media is raised to submerge the recip-

preserve and protect chemically-cleaned and electroplated surfaces by dip or spray



WITH LAQUA

• LAQUA displaces water from a surface and deposits a thin protective film thereon—eliminates drying operation after plating • does not interfere with electrical contacts • LAQUA-coated metals can be spot welded — soldering operations are improved • prevents oxidation, sulfur discoloration, finger-printing of parts during storing and handling • resists salt spray and humidity • can be recoated with almost all finishes. *Write for free sample and catalog.*

LAQUA is but one of the fine line of Industrial Metal Cleaners, Paint Strippers, Spray Booth Maintenance Materials and Chemical Specialties manufactured by FIDELITY.

TERRITORIES ARE AVAILABLE FOR REPRESENTATIVES AND DISTRIBUTORS.

FIDELITY CHEMICAL PRODUCTS CORP.

472 Frelinghuysen Avenue, Newark, New Jersey

For more data circle **374** on Reader Service Card

Production and Quality Up!

WITH **SLY** CONVECTIONEERED OVEN

With an increase in business, the Interior Steel Equipment Co. has augmented their paint baking facilities. In doing this they have achieved economies in handling of work while maintaining and even enhancing the quality of their products.

They installed a Sly Convectioneered Oven, 45′ long, 9′ 6″ wide, 6′ 9″ high with semi "A" type sheet metal hoods at the exit and entrance ends to form an efficient heat seal. Beneath the oven is a self-contained 2,500,000 BTU per hour direct gas-fired heating unit.

As aids in achieving excellent finishes on the products are: (1) efficient air distribution over the work (2) temperature uniformity in the baking zone (3) correct exhaust conditions to maintain proper oven atmosphere, and (4) a low overall temperature gradient between supply and recirculation temperatures.

This installation is typical of the careful engineering that goes with all Sly Industrial Ovens. *May we discuss your requirements with you?*

Designers and Manufacturers of: Dust Control Systems, Blast Cleaning Equipment, Tumbling Mills, Industrial Ovens.

THE W. W. SLY MANUFACTURING CO.

SINCE 1874

4784 TRAIN AVENUE • CLEVELAND 1, OHIO

OFFICES IN PRINCIPAL CITIES

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Simultaneous Action...

CLEANS...

RUSTPROOFS...

PHOSPHATES...

METACOTE is the NEW and OUTSTANDING process for anchoring paint to metal surfaces. It PHOSPHATES as it RUSTPROOFS as it CLEANS. Spray or dip . . . no special equipment needed.

METACOTE prevents paint failures on practically all metals and metal alloys. Formulated by metal engineers, METACOTE'S merits are being "proved" daily in some of the country's largest industrial plants.

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Metasurf
CHEMICAL PRODUCTS FOR TREATING METAL SURFACES
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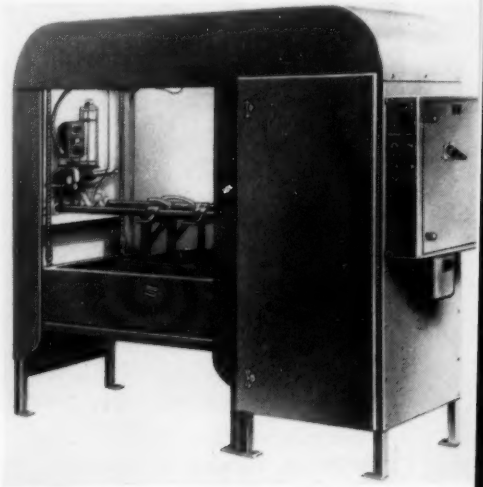
For more data circle **376** on Reader Service Card

rocating rack loads of parts. The parts then move back and forth in the media for a period of one to ten minutes.

The pan-raising mechanism is equipped with a magnetic slip clutch



Reciprocating Fixture-Type Deburring Machine

that aids in controlling excessive pressure and possible distortion of the parts as the pan and media raise to cover the parts.

For more data circle **16** on Reader Service Card

★ ★ ★

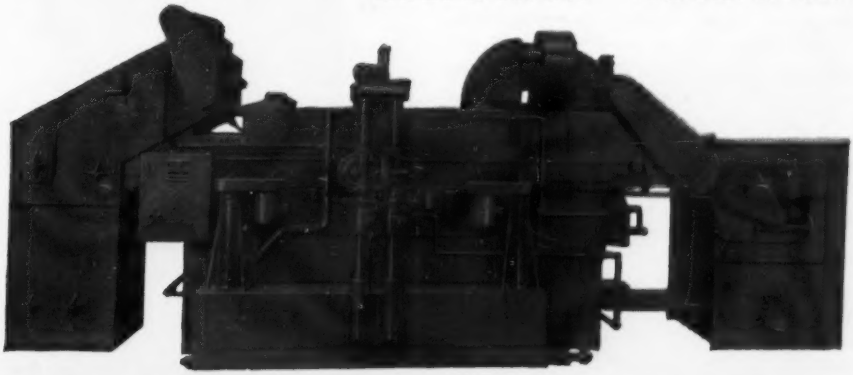
Ultrasonic Cleaning Machines

The Circo line of ultrasonic cleaning machines now includes seven standard models.

The manufacturer recommends these machines for removing buffing and polishing compound residues; for removing honing and abrasive chips from metal surfaces; and for cleaning off non-soluble deposits and machining

Ransohoff

AUTOMATIC PARTS and TOTE PAN CLEANING MACHINE



1 MACHINE DOES JOB OF 2

SAVES TIME, LABOR, SPACE

Parts in tote pans placed in machine are automatically loaded into the drum type washer section. The empty tote pans automatically enter the integral conveyor type washer section above in an inverted position. At the discharge end, clean, dry parts are loaded in the same, clean, dry tote pan!

This machine was designed and built to wash, rinse and hot air dry a wide range of parts for a well known fastener manufacturer. It can also be designed for any combination of washing, pickling, neutralizing, phosphate coating, etc., parts, cleaning tote pans at the same time.

Savings in cost, space, time and labor are substantial since one machine does the work of two! Floor space requirements are cut in half, production rate is increased as desired and automatic features free operating labor.

Ransohoff engineers will gladly survey your cleaning requirements, suggest production-proved methods to cut costs and improve results in your plant.

For complete details, write:
Ransohoff, Inc., 610 N. Fifth Street, Hamilton, Ohio.

Ransohoff *The oldest name... the newest ideas*

Designers and Builders of Equipment for the Surface Treatment of Metals

• Washing • Rinsing • Burnishing • Rustproofing • Sawdust Polishing and Drying • De-Scaling • De-Burring • Drying • Pickling • Complete Finishing Systems • Foundry Wet Cleaning Mills • Ultrasonic Cleaning

For more data circle **377** on Reader Service Card

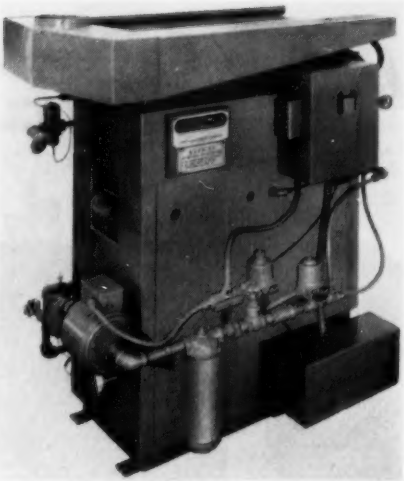
chips. Ultrasonic cleaning machines are said to be especially effective where blind holes and inaccessible recesses must be cleaned.

All Circo ultrasonic cleaning machines are equipped with a removable cleanout door, sump thermometers, drain valves, thermostats, and bulb-actuated water-control valves. Bottoms are sloped for rapid drainage.

Ultrasonic energy is supplied by barium titanate transducers encased in stainless steel. Transducers are frame-mounted and positioned to give maximum effectiveness.

Cleaning fluids are kept clean by a high-flow removable honeycomb filter element. A centrifugal pump provides circulation and spray lance feed.

The ultrasonic chambers on these machines are provided with baffled water-cooled jackets that maintain the cleaning fluid at a temperature of 140 deg. F. For information on these machines, write Circo Equipment Co., 51 Terminal Ave., Clark, (Rahway) N. J.



One of seven Circo Ultrasonic Cleaning Machines: helps to remove buffing compounds

For more data circle **17** on Reader Service Card

Rhodium

ELECTROPLATING SOLUTIONS

Technological knowledge acquired through many years of experience, plus special processes and equipment, assure the high quality of our Rhodium Plating Solutions.

Recommended for contact surfaces of switches, waveguide parts and other electrical applications, such as printed circuits . . . Can be applied in extremely heavy deposits, up to 100 milligrams per sq. inch. Rhodium plating provides the advantages of whiteness, lustre and corrosion resistance of a precious metal.

Consult our staff, without obligation, about your specific plating problems.

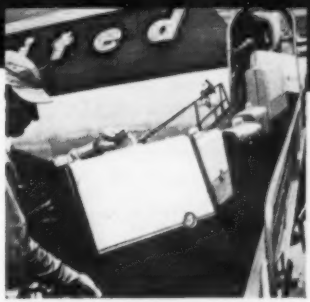
SIGMUND COHN MFG. CO., INC.

121 SOUTH COLUMBUS AVENUE MOUNT VERNON, N. Y.

Specialists in the Unusual... SINCE 1901

For more data circle **378** on Reader Service Card

Samsonite Luggage is built to take a beating



Go on—Treat it Rough! ...Samsonite tells You

Only a Manufacturer, absolutely sure of his product would dare use this sales story! . . . only after testing every available Protective Finish, all possible covering materials . . . only after punishing hinges, handles, bindings and draw-bolts would Samsonite give their approval . . . But, to make DOUBLY SURE, Samsonite chose an Egyptian Specially Formulated Protective Finish that really stands up to this "Go on . . . Treat it Rough" invitation.

An Egyptian Specially Formulated Finish for your Product could give you that DOUBLY SURE feeling too!

"It's better because it's ***EGYPTIAN****"*

EGYPTIAN *Industrial Finishes*

The EGYPTIAN LACQUER MANUFACTURING COMPANY

BOX 444, NEWARK 1, NEW JERSEY

EXECUTIVE OFFICES, ROCKEFELLER CENTER, N. Y. • Plants: South Kearny, N. J.—Lafayette, Ind.

For more data circle 379 on Reader Service Card

Spray Nozzles

Spraying Systems Co. has announced a line of spray nozzles with a relatively small-diameter spray pattern. At 40 pounds pressure, these nozzles produce a spray pattern with a 30-degree spray angle.

Hollowjet Spray Nozzle

The nozzles are available in a wide range of capacities, from 1.5 g.p.m. to 1100 g.p.m. Called Hollowjet Spray Nozzles, they are made in pipe connection sizes from ¼ inch to 5 inches, in brass, steel and stainless steel.

These nozzles were designed for a wide variety of applications, where concentration of spray pattern is necessary. For more information, write for data sheet 7120, to Spraying Systems Co., 3229 Randolph St., Bellwood, Illinois.

For more data circle **18** on Reader Service Card

★ ★ ★

Spraying Apparatus

A spraying apparatus that pumps liquids from 55-gallon drums to a spray nozzle has been announced by Gray Company, Inc., Minneapolis, Minnesota.

A trigger on the spray gun automatically starts and stops the lightweight (13½ lb.) air-powered "Direct-From-Drum" pump. The adjustable nozzle on the gun can be quickly varied for heavy or fine spray.

The pump operates either in open head or 2-inch bung openings of drums, without exerting pressure on the drums. It will empty a drum fast-

STOP COSTLY HANDWORK
Easy LICKS TOUGH JOBS WITH DUAL-ACTION
HEAVY GRINDING, SANDING, DEBURRING TO MICRO-FINISHING
Easy
Model DA Air.
TOPS ON WOOD
The "Dual Action" has proven outstanding on many wood finishing applications, white sanding (hard or soft grain), sealer coats, sealing end grain and many others on Flat or Curved work.
Ask your Jobber for Demo. or write
DUAL-ACTION OR STRAIGHT LINE, AN Easy FOR EVERY JOB.
Model DF Electric.
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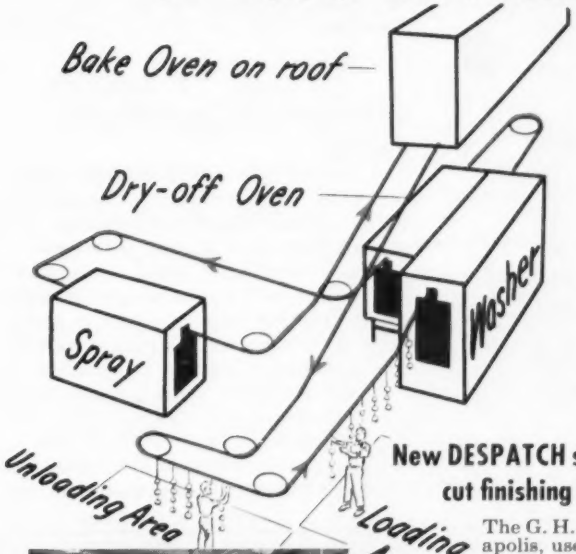
DETROIT SURFACING MACHINE CO.
1266 EAST EIGHT MILE ROAD, DETROIT 20, MICHIGAN

For more data circle **360** on Reader Service Card

FASTER, BRIGHTER PAINTING OF 1000 DIFFERENT PARTS!

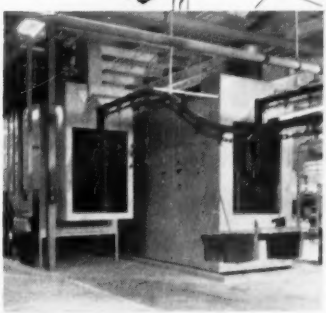


FLOW DIAGRAM shows perspective (not actual scale) of new metal processing and paint finishing system in the G. H. Tennant Company's new plant. Conveyor is 500 ft. long; travels 8 ft. per minute. The 74 ft. bake oven is built on the roof to save floor space. Just-sprayed parts travel up and into the oven through its underside opening. Baking lasts eight minutes at 330° F.

New DESPATCH system helps Tennant Co. cut finishing time 80 man-hours to 24

The G. H. Tennant Company, Minneapolis, used to have trouble painting production quantities of 1000 different parts for their power sweepers, floor machines, scarifiers, roof scrapers, and concrete routers. This new DESPATCH continuous-conveyor finishing system speeds washing and drying of *all* parts (they weigh from ounces to 800 pounds) and speeds spraying and baking of the prime coat and the bright orange or cream finish coat. The system enables Tennant to do in 24 man-hours what used to take 80 man-hours, and assures a superior finish.

The entire system was engineered, built and installed by DESPATCH in cooperation with the Tennant Company. DESPATCH can help you. There's a DESPATCH-trained resident engineer near you . . . talk to him about your finishing requirements.



ALL PARTS first enter 3-stage 44 ft. washer at right, then return through 34 ft. dry-off oven at left. Note master control panel alongside dry-off oven. In washer, surface of metal parts is converted to iron-phosphate coating to prevent rust and corrosion. Temperature of dry-off oven is varied from 350° to 400° F., depending on size of parts.

WRITE TODAY FOR BULLETIN 51C

16 colorful pages on modern ways to achieve better finishes, faster production and smoother handling of metal products . . . at lower cost.

DESPATCH OVEN COMPANY

619 S. E. Eighth St., Minneapolis 14, Minn.

Sales and Service in All 26 Principal Cities

PIONEERS IN ENGINEERING FINISHING SYSTEMS FOR INDUSTRY

For more data circle **381** on Reader Service Card

Graco Pump: directly from drum to spray gun

er than the fluid can be poured from the bung, the manufacturer states.

Further information is available from Gray Company, Inc., 1087 Sibley St., N.E., Minneapolis 13, Minn.

For more data circle **19** on Reader Service Card

★ ★ ★

Leak-proof Centrifugal Pump

A centrifugal pump recently introduced by the Chempump Corporation helps reduce danger of leakage and contamination of plating solutions.

The Chempump unit combines pump and motor in a single hermetic unit. Pumped fluid enters the motor section, cooling that part, and providing automatic bearing lubrication. A corrosion-resistant liner isolates motor windings from the pumped fluid. The pump has no seals or stuffing box.

Chempumps are available in a wide choice of construction materials, in-

have your silk screens made by **NAZ-DAR!**

Silk, Nylon or Metal Cloth

- Prompt Delivery anywhere in U. S.
- Absolutely TAUT screens for perfect registry to last impression of run.
- Perfect reproduction of your black and white drawing.
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PERFECT FOR

TV SETS NAME PLATES TOYS DIALS
ASH TRAYS CHASSIS PRINTED CIRCUITRY

Use NAZ-DAR Weatherproof Silk Screen Enamel

Uniformly high opacity

Write today for screen and ink information, Dept. P-6.

The NAZ-DAR Company
461 Milwaukee Ave. • Chicago 10, Ill.
inks • varnishes • lacquers • silks
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For more data circle **382** on Reader Service Card

TRUE BRITE BRASS SOLUTION

A foolproof solution which has been in use over 6 years in light and heavy production.

- Ready To Use—Just Add Water
- No Variance in Color
- Trouble-Free—Little Supervision Needed
- Low Cost—Additions only once a day

Available in a variety of colors. Will match your sample.

Write for technical bulletin and prices.

TRUE BRITE CHEMICAL PRODUCTS CO.
Box 31, Oakville, Conn.

For more data circle **383** on Reader Service Card

PROFIT BY ALL THE ECONOMIES INHERENT IN ULTRASONIC CLEANING

Branson's job-developed SONOGEN® *Ultrasonic-Cleaning Equipment assures you all these advantages:*

Cleaning-tank sizes from one pint to seventy-five gallons for batch and conveyorized cleaning.

Maximum cleaning efficiency.

Rugged, simple construction for long trouble-free life.

Advanced design based on a decade of manufacture and use of ultrasonic equipment.

Modest investment, low operating and upkeep costs.

Ultrasonic energy has been used for years for rapid, thorough cleaning of sterling, plated and stainless flat and hollow ware, builders' hardware, castings, strip, electrical and electronic components, etc.

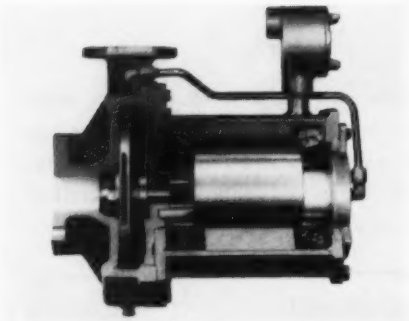
The Sonogen® Model APT-100B is used extensively for pickling and removal of rouge, tripoli and investment-casting materials, prior to plating.

BRANSON ULTRASONIC CORPORATION

26 BROWN HOUSE ROAD, STAMFORD, CONN.

Write or phone DAvis 4-6721 for a demonstration at your plant.

For more data circle **384** on Reader Service Card



Cutaway Photo: Leak-proof centrifugal pump

cluding stainless steel, Monel, Hastelloy B and titanium. Heads range to 195 feet and capacities to 250 g.p.m., while fluid temperatures and pressures may be as high as 1000 deg. F. and 5000 p.s.i. respectively.

Leak-proof Chempumps are suitable for pumping silver and gold cyanide, cadmium plating solutions, zinc and copper cyanides and others.

Further information including complete specifications, dimensions, performance curves and design data is available from Chempump Corporation, Station 51, 1300 East Mermaid Lane, Philadelphia 18, Pa.

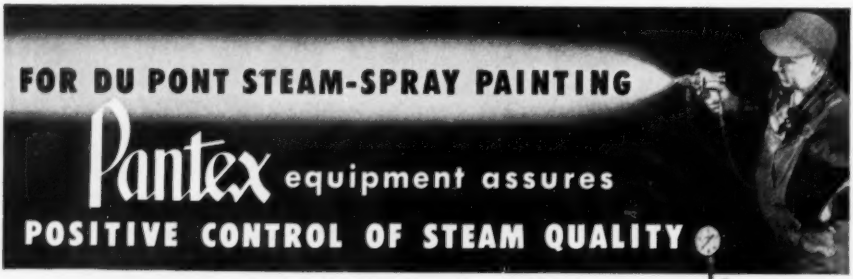
For more data circle **20** on Reader Service Card

★ ★ ★

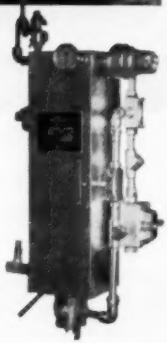
Protective Covering

Onco, a protective covering material for use on finished metals during handling, shipping and storage, has been introduced by Onco Products, Inc., 201 S. Main St., Middletown, Ohio.

Onco (patent applied for) combines foil, a plastic film and Kraft paper into a covering for use in protecting finished surfaces from weather, chemicals, abrasion and dirt during hand-



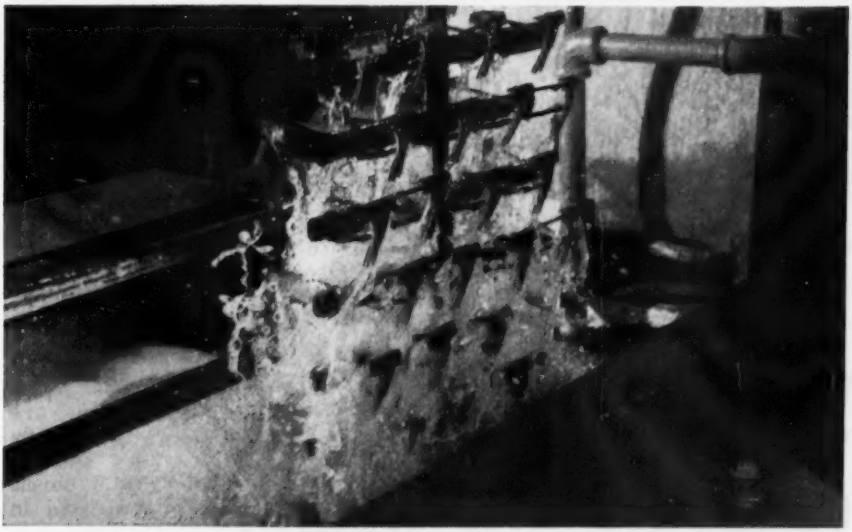
Cost-cutting Du Pont steam-spray painting demands close control of steam quality. To assure this control, Pantex Speedylectric Steam Generators and Steam Superheaters are widely used today. Speedylectric equipment guarantees constant-pressure 98% dry steam . . . with no supervision, no risk of fire or explosion, almost no upkeep . . . plus ample superheating capacity under widely varying load conditions. Write for facts and figures today. Pantex Manufacturing Corporation, Box 660AP, Pawtucket 5, Rhode Island.



Pantex Speedylectric steam superheater
U.L. listed for Class I Group D hazardous atmospheres

For more data circle **385** on Reader Service Card

REPORT NO. 6 / ON LOWERING TODAY'S COST OF PRODUCTION



Soak cleaners that eliminate solvent pre-treatment on most work

step up production, lower cleaning costs

Faster, more efficient production often hinges on quick-working compounds and a minimum number of production steps.

Diversey heavy duty alkaline soak cleaners No. 404 (for brass and steel) and No. 909 (for all metals), save up to 50% of present cleaning costs *on most work* by eliminating solvent dips . . . eliminating hand cleaning and wiping . . . eliminating vapor degreasing. Fast, thorough, non-caustic cleaning action removes quenching oils, buffing compounds and other soil, making solvent pre-treatment operations unnecessary.

Instant wetting completely penetrates foreign matter and starts the cleaning action as soon as work is emerged. Soil is rapidly broken up and dispersed throughout the solution. It *will not cling* on draining work. Since Diversey soak cleaners work so quickly, they are well geared to the demands of automatic equipment having short cleaning cycles.

There's an added margin of safety for your men also. Both No. 404 and No. 909 are mildly alkaline, non-toxic and non-caustic. They will not sting, burn or cause dangerous skin irritation.

For literature on these two products, write today to *Metal Industries Department, The Diversey Corporation, 1820 Roscoe Street, Chicago 13, Illinois.*

PLANTS IN CHICAGO, NEWARK AND SOUTH GATE, CALIF. WAREHOUSES IN PRINCIPAL CITIES.

DIVERSEY. SOAK CLEANING

For more data circle **386** on Reader Service Card

ling, shipping, storage and fabricating.

This material was originally developed to protect stainless steel surfaces during curtain wall construction. It will withstand over 500 hours in a Weatherometer, the manufacturer states.

Onco is easy to apply, adheres well to the surface being protected, yet is easily stripped, leaving no residue, it is stated.

For more data circle **21** on Reader Service Card

★ ★ ★

Test Panels

Standardized steel and aluminum panels for testing and displaying paints and finishes are manufactured by The Q-Panel Company, Cleveland, Ohio. Used by paint manufacturers, raw material suppliers to the paint industry, and paint users, Q-Panels offer increased accuracy in testing and comparing paints and finishes.

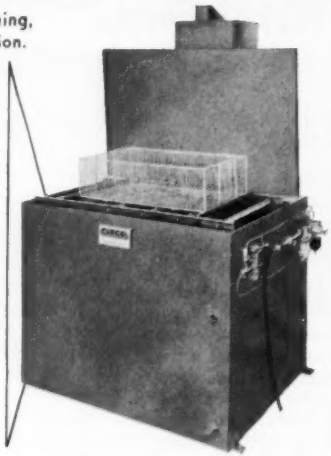
Q-Panels are clean and ready to use. Twenty-five steel panels are wrapped in VPI paper, then sealed in a polyethylene bag to prevent rust or contamination.

Eight standard sizes, ranging from three by six inches to six by 12 inches, include all the common panel sizes. Steel panels are 0.032 inch thick, and aluminum panels are 0.025 inch and 0.032 inch thick.

Steel Q-Panels are made from steel rolled to specifications typical of automotive and appliance grade sheet. Particular care is taken to assure that the

7 IMPORTANT REASONS WHY YOUR COMPANY NEEDS THE CIRCO METAL PARTS POWER OPERATED WASHER

1. Departmentalize Your Cleaning, Save Time and Transportation.
2. Fully Automatic.
3. Adaptable For Use with Solvents, Alkalis or Acids.
4. Powerful Agitating Action Cleans Fast, Effectively and Without Waste.
5. Suitable For Cold Operation or With Steam, Gas and Electric Heat.
6. Exclusive 3-Way Control Valve Automatically Raises and Lowers the Tray For Easy Loading.
7. Two Or More May Be Operated In Tandem For Wash, Rinse, Dip Or Other Cycles.



GET THE FACTS — Write for Bulletin on Complete Specifications for the CIRCO Power Agitation Cleaners. Available in Several Sizes with Air Operated or Motor Operated Agitation Mechanism.

CIRCO

CIRCO EQUIPMENT COMPANY

Since 1923 51 Terminal Avenue, Clark (Rahway), New Jersey

OFFICES IN PRINCIPAL CITIES Nation-Wide Engineering Field Service

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Schaffner Bias Buffs

your answer for economical performance

- TAILOR MADE FOR YOUR TOUGHEST BUFFING OPERATIONS
- FULLY VENTILATED
- COOLER RUNNING
- LOW COMPOUND CONSUMPTION
- FEWER SECTIONS NEEDED
- GIVES LONGER LIFE

The buff you select is all important—it will mean longer buff life and greater production from a buff wheel.

Specify and buy the proven Schaffner Metal Center Air Cooled bias (type) Buff, and don't be satisfied with imitations. You'll find Schaffner buffs last longer, consume less compound and reduce rejections.

Write us. We'll run a test for you in your own plant and prove our claims.

"Schaffner Bros. make things Shine"
Paul — Bob — Gus

Schaffner

MANUFACTURING COMPANY, INC.

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• TRIPOLI COMPOUNDS • CHROME COLORING ROUGE • GREEN ROUGE • JEWELERS' ROUGE • CROCUS COMPOUND • STAINLESS STEEL COMPOUNDS • ALUMINUM BUFFING COMPOUNDS • ALL-PURPOSE BUFFING COMPOUNDS • WHITE COLORING COMPOUNDS • NICKEL BUFFING (LIME) • EMERY CAKE • PLASTIC BUFFING COMPOUNDS • TALLOW GREASE STICK • PUMICE GREASE STOCK • POLISHING WHEEL CEMENT • STEEL POLISHING COMPOUNDS

COMPOUNDS MADE IN BAR, SPRAY OR PASTE

For more data circle 388 on Reader Service Card

In 36 HOURS you'll get an answer to your Paint Stripping Problems when you send them to DuBois' New

Send us several pieces of the work to be stripped or test panels specially prepared if the work is unwieldy.

Thirty-six hours after receipt of the work, a report will be on the way back to you—by telephone if necessary.

Tag each part with name, date and essential problem details including requirements, as, hot and cold methods, tanks available, etc. Write separately, outlining problem, to whom report should go. No charge or obligation, of course.

The DuBOIS Co., Inc. Cincinnati • Los Angeles New York • Dallas

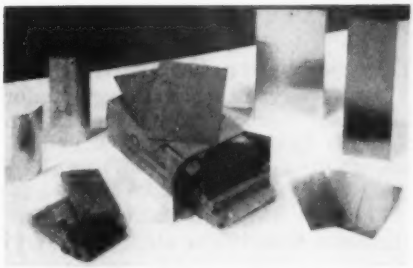
NEW PAINT STRIPPING CLINIC, CINCINNATI 3, OHIO

For more data circle 389 on Reader Service Card

surface finish is uniform and free from flaws which might cause erroneous test results. This uniform surface is also advantageous for displaying finishes and using Q-Panels as color standards.

Since cutting steel or aluminum into small panels will frequently bring about stress-relieving and subsequent bending of the panels, Q-Panels are flattened after fabrication to ensure accuracy in testing and display.

Aluminum panels, which are frequently used for display or for batch records, are made from 3S-½ hard aluminum. This alloy and temper provide a panel that can be bent to conform with a curved surface for color matching, and yet is springy enough to return to its original condition. Light weight and freedom from rust make aluminum panels desirable where many panels have to be carried, handled frequently or filed.



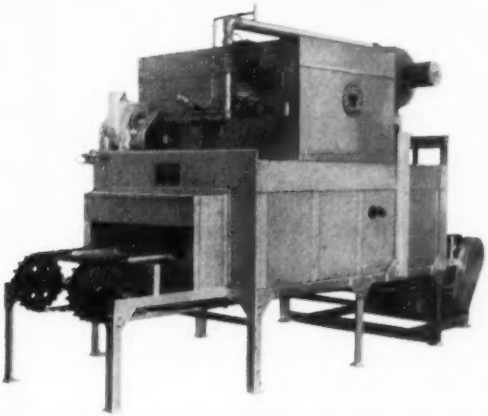
Q-Panels: standardized for finish testing

Special curved panels, anodized aluminum panels, and special length panels in the three standard widths are also available.

Literature may be obtained from The Q-Panel Co., 14116 Lorain Ave., Cleveland 11, Ohio.

For more data circle **22** on Reader Service Card

You're SURE of UNIFORM Drying—FAST



Made in wide range of standard electric-, gas-, oil- or steam-heated, cabinet, rack or truck types and in special batch or conveyor types.

in

ROCKWELL

Recirculating

OVENS

Uniform distribution of controlled, high velocity, recirculated, heated air assures faster drying or baking at precise temperature.

Investigate the oven with the built-in heating "know-how." Write for Catalog.

W. S. ROCKWELL COMPANY

2907 Eliot Street Fairfield, Connecticut

For more data circle **390** on Reader Service Card

Temperature Regulator

A safety-type temperature regulator has been introduced by the Fulton Sylphon Division of Robertshaw-Fulton Controls Company, Knoxville, Tennessee.

Designated the No. 997 temperature regulator, it will close automatically to prevent overheating and possible damage to products in process, in the event the thermostatic unit is accidentally damaged.

The No. 997 contains a large bellows for more powerful response and smoother modulating action in controlling the flow of steam, hot water or other medium. Because it has a special tight-closing, single-seated valve, it is suitable for "dead end" or terminal service. It is available in sizes from ¼ inch to 2 inches.

The manufacturer recommends the

Robertshaw-Fulton's No. 997 safety-type temperature regulator: prevents overheating of solutions even if thermostat is damaged

JELCO

THE BRIGHT COPPER PROCESS

• JELCO COP-BRITE

—Also available JELCO BRASS Additive and BARREL NICKEL Brightener

- *Increases plating production . . . tremendously*
- *Works in regular copper solution*
- *Requires only ONE additive, Cop-Brite*
- *Offers greatest economy —low make-up, low replenishment*
- *Uses the same ONE additive, Cop-Brite, for both Still and Barrel Solutions*

Non-Critical Boosts Production Cuts Rejects

Can be used in both Still and Barrel Plating Solutions

• *Write for complete information*

A Proven Process . . . Used successfully by both manufacturers and job platers

For the "Solution to your Plating Problems" . . . Come to

JELCO FINISHING EQUIPMENT CORP.

153 EAST 26th STREET • NEW YORK 10, N. Y.

Telephone: LExington 2-3055

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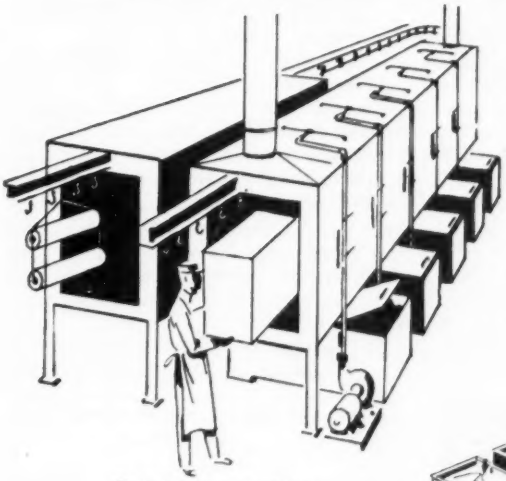
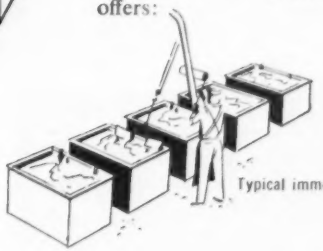
Treat Metals Fast and Economically

with ACP *Chemicals and Processes*



Typical power spray system.

ACP produces the chemicals for treating most metals—to clean them, to prepare them for further processing, to improve corrosion resistance and paint adhesion. It has the experience and the personnel to apply these chemicals economically and effectively, too. Here are just a few of the many products and processes ACP offers:



Typical immersion system.

ACP GRANODINE®—a phosphate coating process for steel which provides an excellent bond for paint and greatly improves the corrosion resistance of the paint system.

ACP ALODINE®—an amorphous coating process for aluminum which protects both painted and unpainted metal and anchors the paint finish.

ACP LITHOFORM®—a phosphate or chromate coating process which prevents objectionable chemical reaction between metal and paint, keeps paint on zinc and cadmium surfaces.

ACP DEOXIDINE®—a phosphoric acid metal cleaner which removes rust and organic soils, destroys rusters, prepares steel, aluminum, brass, copper and other metals for painting.

ACP METAL CLEANERS—Ridoline,® alkaline metal cleaner and Ridosol,® solvent-detergent metal cleaner—remove metal preservatives and metalworking lubricants from metals in process.

ACP RODINE®—pickling acid inhibitors which reduce acid consumption, save steel. They also minimize pitting, burning and embrittlement and reduce the formation of acid fumes.

Write for the "ACP GUIDE to the chemical treatment of metals."

AMERICAN CHEMICAL PAINT COMPANY, Ambler 14, Pa.

DETROIT, MICH. • ST. JOSEPH, MO. • NILES, CALIF. • WINDSOR, ONT.

CHEMICALS ACP PROCESSES

New Chemical Horizons for Industry and Agriculture

For more data circle **392** on Reader Service Card

No. 997 for temperature control of industrial processes, storage or instantaneous water heaters. Equipped with reverse-acting valves, the regulators are suitable for the flow control of cooling water to transformers, air compressors and degreasers.

Further information about temperature regulator No. 997 is available from Fulton Sylphon Div., Robertshaw-Fulton Controls Co., Box 400, Knoxville, Tenn.

For more data circle **23** on Reader Service Card

★ ★ ★

Descaling Process

Development of a process for descaling precipitation hardened 17-7 PH stainless steel after it has received the transformation hardening cycle has been announced by Turco Products, Inc.

The process consists of three steps:

1. After pre-cleaning, and prior to heat treating, apply Turco Pre-Treatment Coating to metal surfaces. This coating prevents the formation of tightly adhering oxides during heat treatment.
2. After heat treating, remove Turco Pre-Treatment coating and heat-treat oxides in Turco Descaling Solution.
3. Pressure rinse, to remove any residual oxides.

Use of the Turco Pre-Treatment Coating enables the descaling solution to remove the heat treat oxides rapidly, without such adverse effects as excessive hydrogen contamination, excessive intergranular attack or badly roughened or over-etched surfaces, the manufacturer states. Metal loss is said to be low (approximately 0.0002 inch per side).

No special equipment is required for processing stainless steel with the

WOOD TANKS
FOR PLATING AND PICKLING

• Give us your requirements . . . we'll build it from the finest woods, to fit your needs *exactly!*

Send for details.

WOOD TANK DIVISION

Kalamazoo TANK & SILO CO.

1571 Harrison Street, Kalamazoo, Michigan

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WHY

DO YOU ALLOW RAPID WEAR ON YOUR BUFFING FIXTURES

when they can be *FUSECOATED* to last up to a year or more? We specialize in protective coatings for fixtures of all kinds and would like to add your name to our long list of regular customers.

Write

for our general information folder or send sample fixture or drawing of same to be FUSECOATED.

Fusion Metal Coating Co.
25493 West 8 Mile Road
Detroit 19, Mich.

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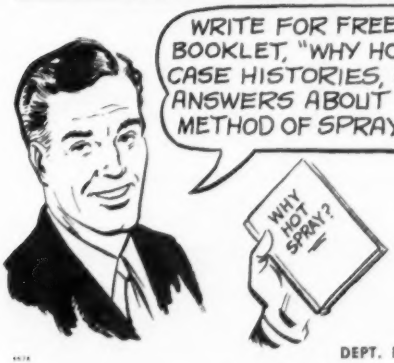
SPEE-FLO

HOT SPRAY MAGIC DOES IT AGAIN!


WRITE FOR FREE, FACT-PACKED BOOKLET, "WHY HOT SPRAY?" ..... CASE HISTORIES, QUESTIONS AND ANSWERS ABOUT THIS PROVED METHOD OF SPRAY APPLICATION.
WHY HOT SPRAY?

Based on actual operating experience from Spee-Flo files.

SPEE-FLO

HOT SPRAY HEATERS

DEPT. PF-28 • 720 POLK AVE. • HOUSTON, TEXAS

For more data circle 395 on Reader Service Card

Turco Descaling Process. The usual descaling tanks are sufficient.

Technical literature on this process may be obtained by writing to Turco Products, Inc., 6135 South Central Ave., Los Angeles 1, Calif.

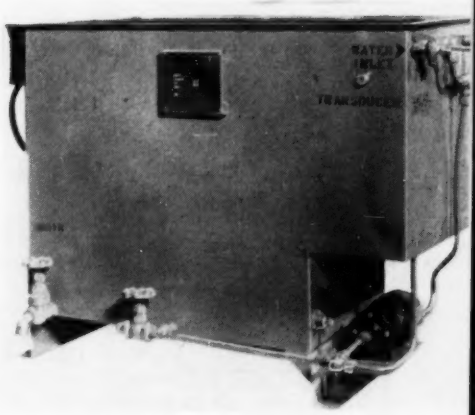
For more data circle **24** on Reader Service Card

★ ★ ★

Small Ultrasonic Degreaser

A small ultrasonic degreaser has been developed by the Ramco Equipment Corporation, division of Randall Manufacturing Co., Inc., 811 Edgewater Rd., New York 59, N. Y.

Model DV-18 can be used in engineering, chemical testing laboratories, and even for continuous production work. It thoroughly cleans such parts as ball bearings, surgical instruments, watch and instrument parts, tools, dies and hydraulic valves.



Ramco's Model DV-18 Ultrasonic Degreaser

The DV-18 Ultrasonic Degreaser has thermostatic control, filter, manual spray, copper cooling coils, stainless steel heater and a solvent recovery system.

For more data circle **25** on Reader Service Card

For cleaning metal, wood and plastic surfaces before painting. Order today through your supplier.

DETRO SALES CO., INC., *Culver City, Calif.*
Standard of the Finishing Industry Since 1934

For more data circle **396** on Reader Service Card

Randolph

EXPERIENCE and RESEARCH MEAN

BETTER FINISHES
for your products

LACQUERS • ENAMELS
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TEXTURE ENAMELS
SPECIALIZED PRODUCTION FINISHES
AIRCRAFT FINISHES

Depend on us for Prompt Delivery

RANDOLPH PRODUCTS CO.
CARLSTADT, N. J.

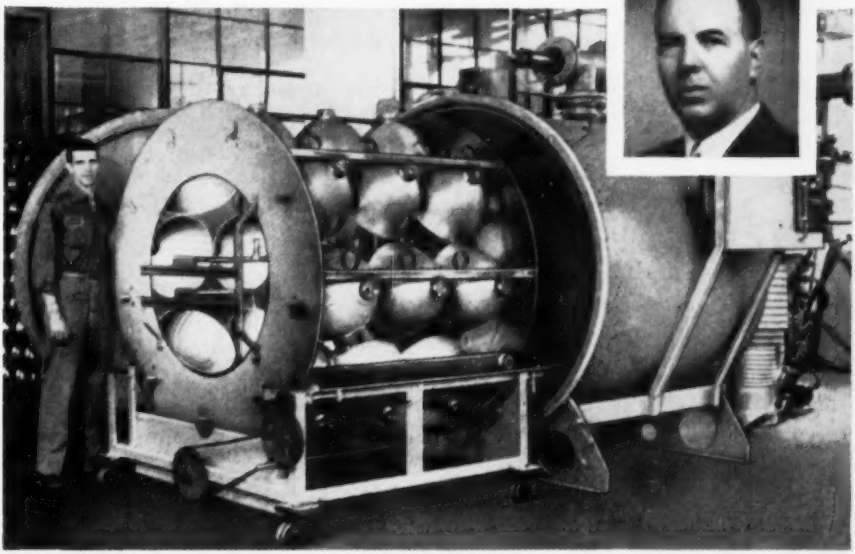
For more data circle **397** on Reader Service Card

"Our Reflector Finishing Costs Dropped from $4.00 each to 95¢ each

WHEN WE CHANGED FROM ELECTRO-PLATING TO VACUUM COATING"

states

Mr. Elwood C. Rogers
President
Elwood Pattern Works, Inc.
125 N. East Street
Indianapolis, Indiana



NRC Rapid Cycle Vacuum Coater used to produce a new lower cost, higher quality finish on enlarger reflectors by Elwood Pattern Works, Inc., one of the country's leading photo enlarger manufacturers.

Other comments made by Mr. Rogers about the benefits resulting from his NRC "Rapid Cycle" Vacuum Coater:

"Customers are enthusiastic" . . .

". . . has eliminated all our troubles".

". . . gave us a reflector that would not tarnish or be affected by the heat".

"Our figures show this unit repays its total initial cost in less than 5 months".

You'll find NRC Vacuum Coaters have other important production advantages. They are easier to load . . . safeguarded from operator errors . . . faster to operate . . . less costly to maintain.

We have had years of experience in making and operating vacuum coaters. We can help you on all the problems involved in setting up a vacuum coating production unit — the size of the coater, method of loading, selection of lacquers, type of coating, and many others.

Get all the facts on the lower costs, improved quality possible with vacuum coating. Send coupon below.

We Need
FIVE ENTHUSIASTIC ENGINEERS
To Help Us Keep Growing.

Mechanical, electrical and chemical engineers who honestly enjoy solving novel problems in brand new fields are offered new responsibilities and more stimulating work. Write Mr. David Tobin or call De 2-3900.

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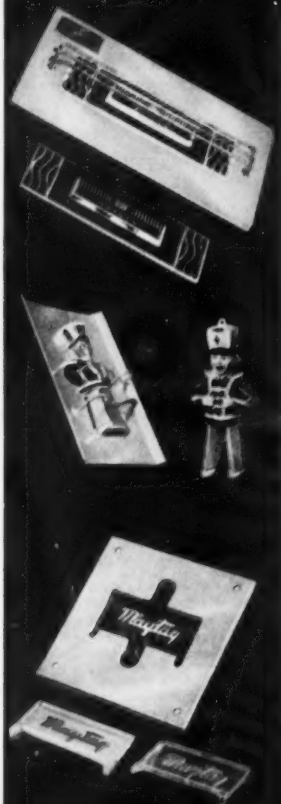
Have your representative call ☐
Name ..... Title .....
Company .....
Address .....
City ..... Zone ... State .....

For more data circle **398** on Reader Service Card

FIORE

MASKS FOR PRECISION PAINTING



Fiore Spray Masks are used on plastics, stampings and die-castings that have depressed or raised detail and on any other irregular shaped surface. If a product can be molded, stamped or die-cast, it can be decorated by Fiore spray masks.

Over ten years many manufacturers have been decorating their products by using Fiore spray-masks, associated jigs, fixtures and spray machines. Fiore Spray Masks and accessories are simple to use. An unskilled worker can operate them without special training and obtain perfect duplication and greater speed at a minimum cost.

Send for your free copy of our 20 page book. Or, send your samples and drawings for consultation and estimates.

WM. M. FIORE, INC.

269 - 41st STREET BROOKLYN 32, NEW YORK

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Wyandotte spray cleaners

keep parts clean, every step of the way!

Rust-inhibiting EXPRAY (AP)
For hot or cold use on all metals. Low, controlled foaming in all washers. Prevents rust; non-scaling with any water; works even with heavy soil loads. EXPRAY (AP) is excellent for chip, grinding dust, and fabricating-oil removal in one-stage washers. Works well in multi-stage washers, too.

Low-foaming EXPRAY 541
This Wyandotte spray cleaner is highly silicated to provide built-in maximum detergency — removes heavy drawing compounds, buffing compounds, and machining oils. It is designed for use on all metals except aluminum; built for heavy-duty use with heavy soil loads; can be used in highest pressure washers without foam problems. Non-dusty, easy-to-handle.

Heavy-duty INDUSTRIAL No. 38
For heavy-duty spray washing, Wyandotte offers INDUSTRIAL NO. 38. This free-rinsing, alkaline cleaner is essentially anhydrous—all cleaner. No built-in water. An industry standard for years, unexcelled for handling those tough jobs on steel, brass, and zinc die castings.

New SPRAY-ALTREX
The newest and best spray cleaner for aluminum. Removes all aluminum soils, including stencil ink, without etching. Low foaming at all temperatures in all washers. For hot or cold use. A non-dusty product which gives excellent performance, even under the most adverse conditions.

Get free information today!
Wyandotte has custom-designed these cleaners to meet the problems encountered in spray cleaning between machining operations, and other special applications. To get details on how they can solve your particular spray-cleaning problems, contact your Wyandotte man, today. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California. Offices in principal cities.*

Wyandotte CHEMICALS
REG. U. S. PAT. OFF.

J. B. FORD DIVISION

THE BEST IN CHEMICAL PRODUCTS FOR METAL FINISHING

For more data circle 400 on Reader Service Card

Page 138

News of the Industry

New plants . . . company news . . . new positions . . . meetings . . . societies

NEW PLANTS

The acquisition of a two-story building of approximately 40,000 square feet, in Nutley, New Jersey, has been announced by **Sel-Rex Corporation,** manufacturer of precious metals processes, rectifiers, airborne power equipment, liquid filters, and metal finishing equipment.

According to Morris M. Messing, Sel-Rex president, the new building will house the firm's executive offices, rectifier and filter manufacturing, precious metals production and experimental laboratories, and a complete pilot plant for sample precious metals electroplating.

In addition to the new plant and executive offices, Sel-Rex also maintains branch offices and warehouses in Detroit and Chicago. A new West Coast branch office and warehouse is scheduled to be opened in Los Angeles in the near future.

Four New England chemical and fertilizer companies have merged. The companies involved are **Apothecaries Hall Co.,** Waterbury, Conn.; **Rogers & Hubbard Co.,** Portland, Conn.; **Woodruff Fertilizer & Chemical Works, Inc.,** North Haven, Conn.; and **Deerfield Fertilizer Co.,** South Deerfield, Mass.

The name of Apothecaries Hall Company, which is the surviving corporation, has been changed to The Hubbard-Hall Chemical Company. It will operate its industrial chemical and wholesale paint business, and nickel foundry under the name of Apothecaries Hall Company Division of The Hubbard-Hall Chemical Company. A subsidiary, Connecticut Chlorine Products, Incorporated, will continue to operate under that name.

Directors of the new corporation are William L. Bradley, Clarence F. Clark, Stanley M. Cooper, B. B. Fall, Chauncey P. Goss, Harlan H. Griswold, Edward R. Jones, Frederic R.

New quarters for Sel-Rex in Nutley, N. J.: rectifiers, filters, precious metal processes

Kellogg, James R. Rossman, J. Warren Upson, Levi Wilcox and Samuel P. Williams, 3rd.

Officers of the merged company include Frederic R. Kellogg, president; Edward R. Jones, executive vice-president and treasurer; B. B. Fall and James R. Rossman, senior vice-presidents; Frederic S. Foster and John Sanford, vice-presidents; E. S. Davis, Jr., secretary and assistant treasurer; Arthur F. Kingsbury, Jr., Everett D. Marvin, Jr., and T. Z. Voyda, assistant vice-presidents; W. H. Stahl, assistant secretary and Benjamin S. Douglas, assistant secretary and traffic manager.

★ ★ ★

Cowles Chemical Company, Cleveland, has granted a license to Sifrance, Paris, France, to manufacture anhydrous sodium meta, sesqui and ortho silicates by the Cowles process. The license also grants the right to use Cowles' trade mark, Drymet, according to a joint announcement by R. F. Huntley, Cowles' president, and Jean Mercier, Sifrance managing director.

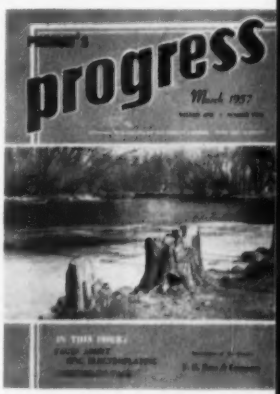
★ ★ ★

The Dallas, Texas, branch office of the **Binks Manufacturing Company** has moved to a new building located at 8005 Sovereign Row. Binks manufactures a complete line of spray equipment for industrial finishing.

The new 7,000-square-foot building will house air-conditioned office quarters, a complete parts stock, and well-equipped repair facilities staffed by factory-trained specialists.

COMPANIES

Promat Div., Poor & Co., 851 S. Market St., Waukegan, Ill., has announced that it will publish a monthly external magazine called *Promat's Progress.*



This magazine will be sent to persons employed by metal finishing firms who are interested in hot-dip, electroplating and electrogalvanizing processes.

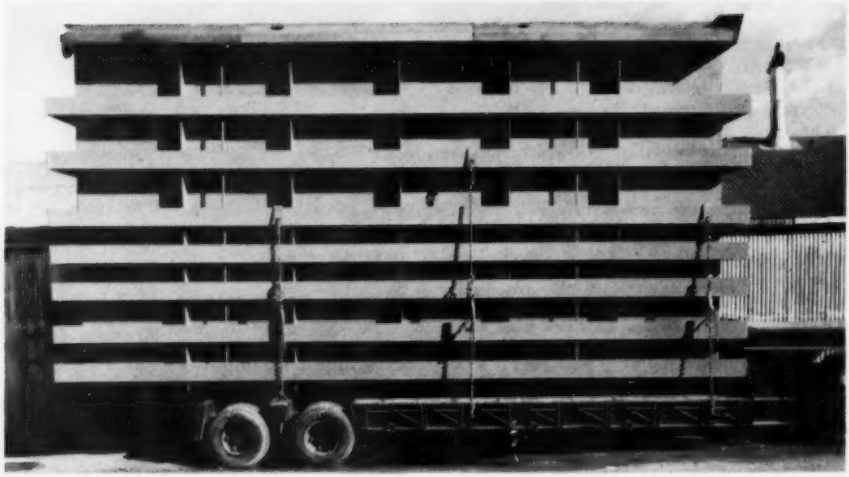
Promat manufactures chromate finishes, acid additives and processes used in finishing and corrosion protection of metal.

★ ★ ★

The Metal Finishing Division of **Frederic B. Stevens, Inc.,** has announced that shipment was recently completed on what may be the largest tank for aluminum anodizing ever produced.

The tank measures 26 feet long, five feet wide and 14 feet deep. It required seven heavy-gauge steel re-

New Binks Branch Building in Dallas, Texas: office, warehouse and repair facilities



Side view of large anodizing tank. When installed, this tank will have a solution capacity of over 13,500 gallons—about 60 tons. Inside of the tank is lined with rubber.

inforced belts to ensure rigidity when filled with solution.

In addition, the entire inner area (1,000 square feet) was coated with a 3/16-inch synthetic rubber lining.

Delivery of the complete tank was made to Reynolds Metals Company.

★ ★ ★

Sale of automatic paint spraying machines, increased more than 100 per cent in 1956, helped lead **The DeVilbiss Company** to a record sales year in 1956, Howard DeVilbiss, president, reported recently.

Mr. DeVilbiss noted new applications during the year in the automotive, glass, metal stamping and tobacco industries as examples of the expanding demand for the company's products.

★ ★ ★

Allied Research Products, Inc., Baltimore manufacturer of chromate conversion coatings and plating chemicals recently played host to a group of 20 visitors representing many types of manufacturing industries of Germany and Austria.

The visit was arranged in conjunction with the German Educational

PROSEAL 1 and 3
An aqueous solution of a combination of Proseals 1 & 3 imparts a conversion chromate finish on electrodeposited zinc and when sealed and leached with Proseal A-2 or 2-B produces a bright finish with a minimum of iridescence.

PROMAT

This chromate finish has extremely high resistance to corrosion and to the formation of corrosion products. For free technical information, write us today. Also send for free copy of "Promat's Progress".

PROMAT DIVISION - POOR & COMPANY

851 SOUTH MARKET STREET PF-3 WAUKEGAN, ILLINOIS

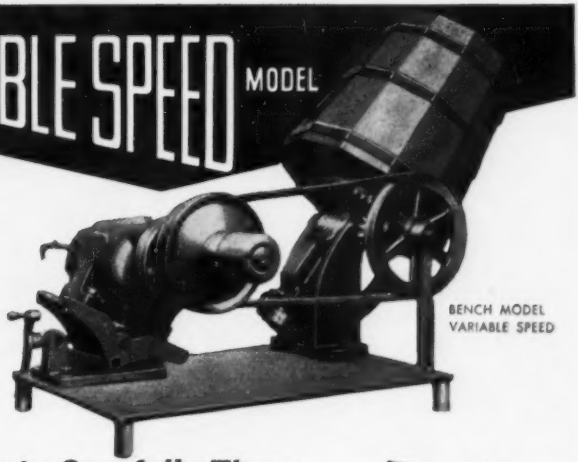
Manufacturing Plants Waukegan, Ill. Philadelphia, Pa. Gardena, Calif.

For additional information and technical assistance write Promat Division — Poor and Company

For more data circle **401** on Reader Service Card

INVESTIGATE THIS TIME-SAVING

VARIABLE SPEED MODEL



BENCH MODEL
VARIABLE SPEED

Bench-Type Single Speed

No. 5—Single Speed

No. 5—Variable Speed

No. 5A—Single Speed

No. 5A—Variable Speed

No. 6—Single Speed

No. 6—Variable Speed

Note Carefully These IMPORTANT POINTS

Barrels can be filled with parts or abrasive—*while running.*

Work can be watched — samples removed for inspection — *while running.*

Angle can be changed for best abrasive or polishing action — *while running.*

Barrels can be emptied by tilting to pouring position — *while running.*

Barrels are made in various sizes, shapes, and materials. They are easily replaced.

If You're a Tumbler, Send for This NEW CATALOG

THE HENDERSON BROS. COMPANY

"The Tumbling Barrel People"

134 SOUTH LEONARD STREET
WATERBURY, CONNECTICUT

SINCE 1880 DESIGNERS AND BUILDERS OF TUMBLING BARREL EQUIPMENT

For more data circle 402 on Reader Service Card

Travel Association, an organization whose purpose it is to promote industrial and commercial relations between Germany and other countries.

The group toured the Allied plant and laboratory facilities, as well as the electroplating facilities of the host's subsidiary company, Allied Metal Finishing Corporation.

The group's tour included 20 companies in the Midwest, Great Lakes and Eastern Seaboard regions.

★ ★ ★

Wire-bound crates used for packing stoves by **Vernon Furnace and Manufacturing Co.**, Mt. Vernon, Ill., have solved the problem of hidden damage. In so doing they have earned the N.S.T. (National Safe Transit) label.

Stack-on ovens made by this company are porcelain enameled on the front, sides and top, except for models having stainless steel front panels. Built-in ovens are equipped with either stainless steel or porcelain enameled front panels. All need protection from being scarred or otherwise damaged between the factory and delivery to the customer.

Crate used for shipping "Vernois" brand ovens allows inspection of the contents upon arrival at destination. (Photo courtesy Wirebound Box Manufacturers Assn., Chicago.).

This type of wire-bound crate absorbs most types of shock during shipping and handling and also allows inspection of the contents for damage when it arrives, without being opened. The crates are designed to stack safely in warehouses. They are fast and economical to pack, the company has found.

★ ★ ★

Branson Ultrasonic Corporation's exhibit at the IRE Show included a miniature simulated conveyorized ultrasonic degreasing system that re-

For Platers, Silversmiths, Jewelry Mfgrs., Makers of Watches, Clocks and Electronics and other metal finishers.
Supplied in straight or crimped brass, steel, nickel silver or stainless steel wire in sizes .0025 to .006 and in bristle, fibre or Nylon. Special sizes and shapes to order.
Write (Dep't. P) on your letterhead for catalog and price list

DIXON & RIPPEL, INC. Box 116 Saugerties, N. Y.
ESTABLISHED 1856

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MIRACLE PAINT REJUVENATOR

All paint restored to original consistancy without opening can. 2 minutes per gal. AVAILABLE ¼ PT. to 55 GALS.

MIRACLE PAINT REJUVENATOR COMPANY
127 E. 9th St., St. Paul 1, Minn.

55-GAL. MODEL

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KLEM

PRODUCT OF THE MONTH

KLEM-FILM

A new vinyl plastic protective coating that can be sprayed or brushed on paint spray booths. This new product, "Klem-Film," can

be peeled off, removing paint deposit with it and leaving the booth clean. It offers several other advantages. (1) It dries extremely fast. (2) It is white in color, providing reflective light in the booth. (3) It will not support combustion when dry. (4) It has unusual tensile strength, peeling off in large sheets and speeding the job. (5) It does not lose its elasticity even when subjected for a long period to heat as high as 290°F. "Klem-Film" can be applied to other equipment than spray booths to protect them in use and in storage.

YOUR SURFACE FINISHING PROBLEMS . . . can be solved by Klem engineers. Our complete lab is equipped to duplicate almost any industrial situation, determine the cause of difficulty and suggest the formula and procedure for your operation.

THE KLEM REPRESENTATIVE

He's in your area to help you. The next time he calls at your plant, take advantage of his specialized experience and training in metal surface cleaning and preparation. If you have a problem he may be of help to you on the spot, if not he'll use the KLEM-PLAN to present the facts to our lab technicians.

KLEM CHEMICALS, INC.

WRITE FOR THE KLEM CATALOG, TODAY

14401 Lanson Avenue
Dearborn, Michigan

1950 No. Central Ave.
Elmonte, California

For more data circle 405 on Reader Service Card

Miniature conveyor at recent IRE Show demonstrates typical ultrasonic cleaning set-up for high-speed mass cleaning of parts and assemblies. Oils and insoluble soils are easily removed, even from normally inaccessible surfaces, in less than a minute's treatment.

moved oil, graphite, and other insoluble soils from electronic parts, bearings, pen caps, and other parts.

Cleaning time for these parts was less than a minute. Because Branson's "Show-tank" is glass-windowed and back-lighted, tiny "spiders," the visible symptoms of cavitation, are clearly noticeable in the liquid.

NEW POSITIONS

Charles F. Radley, one of the original directors of **Oakite Products, Inc.**, has retired from active duty as director of publicity and member of the company's board of directors. He is, however, continuing in the employ of the company as a consultant on advertising, public relations, and general management policy.

Charles F. Radley

Jules Horelick

Allied Research Products, Inc., Baltimore, Maryland, manufacturer of Iridite Chromate Conversion Coatings and ARP Plating Chemicals, has announced the appointment of **Jules Horelick** as staff executive assistant to H. C. Irvin, president.

Mr. Horelick has been with Allied since its inception in 1947, his most recent capacity having been as manager of a subsidiary operation, Allied Metal Finishing Corporation.

VINYL PLASTISOL COATINGS

* APPROVED SOURCE

- **MATERIAL HANDLING**—TOUGH • DURABLE • NOT AFFECTED BY TRICHLOR.
- **TUMBLING BARRELS**—INEXPENSIVE • SEAMLESS • LONG LIFE LININGS
- **PLATING EQP'T.**—VERY DURABLE • EXCELLENT CORROSION RESISTANCE
- **ELECTRICAL INSULATION**—APPROX. DIELECTRIC VALUE 400V/MIL.

FOR FURTHER INFORMATION: **MARATHON METAL PRODUCTS, INC.**
67 HUNTINGTON ST. CORTLAND, N. Y.

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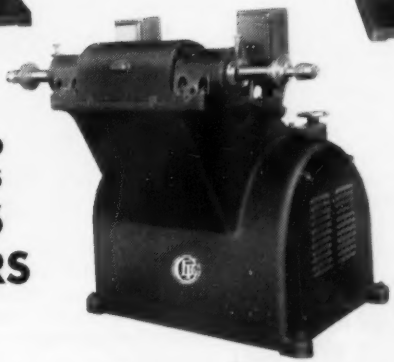
2-BEARING EXTENDED SPINDLE TYPE

CHECK ON THE

COMPLETE

LINE!

4-BEARING WIDE TYPE



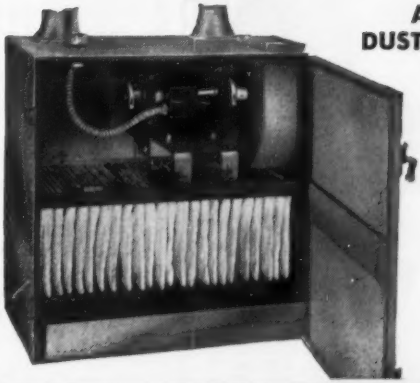
DOUBLE MOTOR DOUBLE SPINDLE OVERHUNG PEDESTAL TYPE

63 STANDARD TYPES & SIZES

BUFFERS POLISHERS

Featured Nation-wide by Leading Distributors. Write for Catalogue TODAY!

Also, makers of a complete line of pedestal and bench grinders and buffers, speed lathes, dust collectors and cut-off machines.



AIRMASTER DUST COLLECTORS

Bag Type (as shown) Also Cyclone Type

THE *CINCINNATI* ELECTRICAL TOOL CO.

322 MT. HOPE AVE. • CINCINNATI 4, OHIO

For more data circle **407** on Reader Service Card

At a recent sales meeting in Detroit of Jensen national representatives, Frank Jensen, president of **Jensen Incorporated,** announced the following appointments: **Ben Milt,** sales manager; **John J. Casey,** chief engineer; and **Bruce S. Stewart,** factory sales engineer.

The subject of the meeting was "1957 Sales Strategy." Latest technical details of Jensen Ovens and Conveyors were discussed.

★ ★ ★

E. B. Thompson, assistant sales manager of **Parker Rust Proof Company,** Detroit, Michigan, has been promoted to general sales manager.

Mr. Thompson joined Parker 19 years ago, and was assigned to the company's New York office Sales-Service staff. He was later promoted to Western Region and Chicago office manager, which post he held for eight years before his transfer to Detroit as assistant sales manager.

E. B. Thompson

Leslie Rouse

Leslie Rouse has been assigned by **Better Finishes & Coatings,** Newark, New Jersey, as sales representative for the New York State area for that company's line of industrial finishes, architectural and maintenance paints and strippable coatings.

★ ★ ★

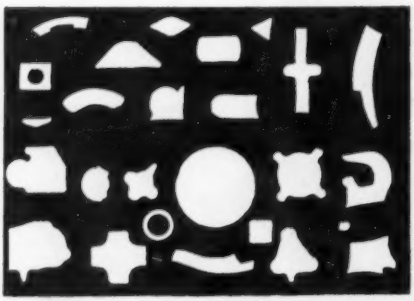
Howard S. Thrasher has been promoted to general sales manager of **The Seymour Manufacturing Company,** Seymour, Conn., in one of five personnel changes announced by the company.

With **Adolphe W. Grele,** simultaneously named assistant sales manager, Mr. Thrasher will supervise selling activities both for the nonferrous metal producing company and its wholly-owned subsidiary, The Phosphor Bronze Corporation. For 10 years prior to his present appointment, Mr. Thrasher was general sales manager and secretary of Phosphor Bronze only.

W. C. Shattuck has been named special sales representative in the New York headquarters. From 1955 until joining Seymour, he was assistant to the president of Pennwoven, Incorporated.

★ ★ ★

Pangborn Corporation, Hagerstown, Md., manufacturer of blast cleaning and dust control equipment, has announced the promotion of **Arthur J. Buckley** to general sales manager.



Pre-Cut Masks Speed Finishing

Brady Pre-Cut Masks are self-sticking — go on fast and accurately. Protect from finishing to inspection. Hundreds of shapes and sizes in stock, for paint spraying, baking, tumbling, etc. Specials made to order. Fast delivery. Distributors in 150 cities.

Write for free samples and Bulletin 160-C.

W. H. Brady Co.

746 W. Glendale Ave., Milwaukee 9, Wis.

For more data circle **408** on Reader Service Card

Clark Equipment Company products are built to take a beating. That's why this company uses a Parlon alkyd finish, supplied by Egyptian Lacquer Manufacturing Company, for all of its construction machinery.

A RUGGED ASSIGNMENT BUT THIS FINISH CAN TAKE IT

. . . because it's fortified with Parlon®

Here's what Clark requires: A finish with high gloss; chipproof; relatively nonfading; resistant to weather, chemicals and gasoline. All this plus a fast dry that enables spray operators to begin immediate application of a second coat to a large unit at the completion of the first. A Parlon-fortified production enamel was adopted because it meets every requirement.

If your requirements are similar, perhaps you, too, should consider the advantages of Parlon-based coatings. They can save you time in the shop and keep your products looking new, longer. Paints formulated with Parlon are available from 400 manufacturers under their own brand names. Or, for more information on how Parlon can help you, write:

Cellulose Products Department

HERCULES POWDER COMPANY

INCORPORATED

927 Market Street, Wilmington 99, Delaware

For more data circle 409 on Reader Service Card

CR57-1

Fred Koelble has been named staff assistant for **Pennsalt Chemicals'** Corrosion Engineering Products Department. In this capacity he will assist Sales Manager Robert R. Pierce in the handling of orders, quotations and specifications on the Pennsalt line of acid-proof cements, including Penchlor, Corlok, Asplit, Furan, PRF and HF, used in bonding acid-proof brick and tile.

★ ★ ★

Victor F. Stine has been elected president of the **Pangborn Corp.**, Hagerstown, Md., manufacturer of blast-cleaning and dust-control equipment. Concurrent with Mr. Stine's appointment, **Ralph M. Trent** assumes the duties of a director and executive vice president. **W. O. Vedder** has been elected a vice president. Thomas W. Pangborn, founder and president of the corporation since 1904 will continue to serve as chairman of the board of directors, while John C. Pangborn, former first vice president will fill the office of vice chairman of the board.

FINER FILTERING means LESS REJECTS
DO YOU know EXACTLY WHAT
ALSOP

HAS to offer in the way of totally clean solution at all times — and do you know what that means—MOST of your troubles are eliminated before they start.

Write Today For New Catalog

ALSOP ENGINEERING CORP.
1205 Keen St. Milldale, Connecticut

For more data circle 410 on Reader Service Card

Dr. Klinkenstein

Victor F. Stine

Dr. Gustave Klinkenstein, president and technical director of **Maas & Waldstein Co.**, manufacturer of paints and industrial finishes, has completed forty years service with that firm. Dr. Klinkenstein joined Maas & Waldstein Co. in 1916 as a junior chemist. He subsequently rose to chief chemist and then to technical director. Prior to his present position, Dr. Klinkenstein was vice president and technical director of the company.

Dr. Klinkenstein has made many important contributions to the paint and industrial finishes industry. These include his introduction of the use of the roller mill to grind pigments for lacquers and enamels and his early pioneering in the field of hammered-effect and wrinkle enamels.

Dr. Klinkenstein has served as chairman of many committees of the New York Paint, Varnish and Lacquer Association, as well as vice president, president, and advisor to presidents of that association. He has also served as chairman of the Industrial Products Finishes Steering Committee and as vice president for the Eastern Region of the National Paint, Varnish and Lacquer Association.

★ ★ ★

Three new directors have been named by **Norton Behr-Manning Overseas, Inc.**, according to A. Donald Kelso, president. They are **Frank M. Ryan, Dr. Wilfred F. L. Place**, and **John R. Allison.**

How to Control Corrosion on Bare Aluminum

Corrosion is a real threat to aluminum, especially to the higher strength alloys. It can be controlled by using a chemical surface treatment, with results as dramatically effective as those shown in the illustrations at the right.

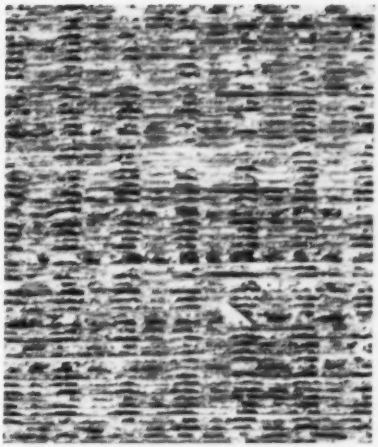
The corrosion protection is effected by Bonderite 710 or 720, applied by spray, immersion, or brush-on methods. A thin, iridescent coating, light to golden brown depending on the alloy treated, covers all surfaces of the aluminum and protects it against corrosion.

The coating produced by Bonderite is integral with the metal itself. It is flexible and can withstand moderate draws without difficulty. Arc and spot welding fabrication methods need not be changed, because the coating conducts electricity. It has good resistance to bimetallic and galvanic corrosion. Sheets, castings, forgings, extruded and rolled structural forms may be treated.

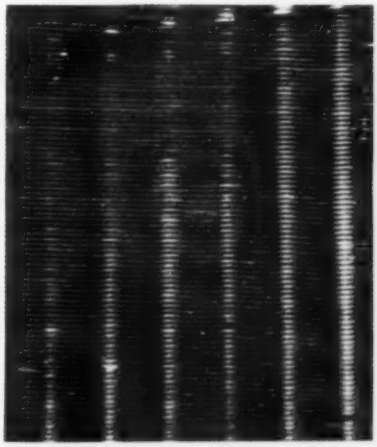
Bonderite 710 and 720 solutions are sludgeless, easily controlled, uniform in results.

These treatments may be used to increase the durability of paint finishes with equally outstanding effectiveness.

The Parker man in your territory has valuable experience to share with you in treating aluminum and its alloys. A letter or phone call will bring him to you.



UNTREATED—Unretouched photo of section of aluminum heat exchanger after 1150 hours in salt spray. Note corrosion.



BONDERITE-TREATED—Unretouched photo of section of identical aluminum heat exchanger after 1150 hours in salt spray. Note absence of corrosion.

SINCE 1914—LEADER IN THE FIELD

PROTECTED BY Bonderite QUALITY CORROSION RESISTANT

PARKER RUST PROOF COMPANY
2172 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE	TROPICAL
corrosion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces	heavy duty maintenance paints since 1883

For more data circle **411** on Reader Service Card

Joseph D. Allen, Jr., has been appointed chief technical sales engineer for the Eastern District of **Federated Metals Division, American Smelting and Refining Company**, according to a recent announcement by A. M. Callis, general sales manager, Eastern Department.

★ ★ ★

M. B. Roosa, vice president in charge of sales, **Parker Rust Proof Company**, has announced the appointment of **R. L. Greene**, assistant sales manager, to Special Products Sales. Mr. Greene will supervise all activities in connection with aluminum treatments marketed by Parker.

Also announced were the appointments of **R. I. Peterson**, general service manager, to the post of central region manager and **C. F. Rasmussen**, assistant service manager, to the post of assistant central region manager.

★ ★ ★

A. E. Sakavich has been placed in charge of sales development service for **Kelite Corporation**, manufacturers of industrial chemicals and steam cleaning equipment.

J. E. O'Brien

A. E. Sakavich

John E. O'Brien has been appointed district sales manager of Kelite's Philadelphia Sales District.

★ ★ ★

Three new administrative sales assignments in **Hercules Powder Company's** Synthetic Department have been announced. The new assignments are as follows:

Frank G. Oswald, industry sales manager, will be responsible for the protective coating; printing ink; and food, drug, and cosmetic industries.

J. G. Little, sales manager, Polyols, will be responsible for the sales, promotion, and technical service of pentaerythritols.

Dr. J. W. Kneisley, sales manager, Oxidation Products, will be in charge of the sales, promotion, and technical service of DMT (dimethyl terephthalate), DMI (dimethyl isophthalate), and methyl toluates.

★ ★ ★

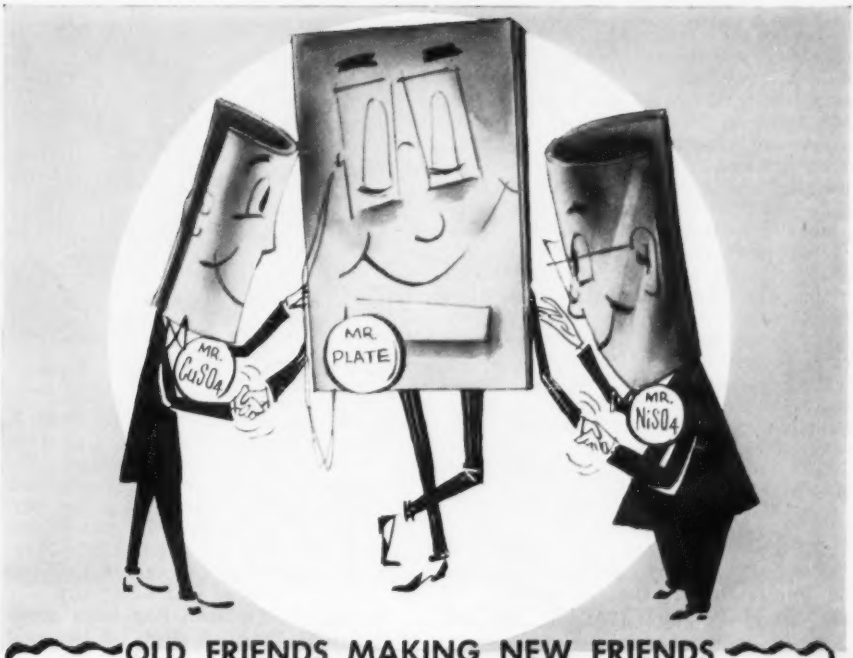
The appointment of **John D. Fowler** to the sales staff of **Pennsalt Chemicals** has been announced by Metal Processing Products Sales Manager John M. Davidson. Mr. Fowler will handle sales of the Pennsalt line of metal cleaners, phosphate coatings and cold working lubricants for the metal fabricating and finishing industries in Canada.

Send for this folder on D'OILER DEGREASERS

Contains all types of degreasers: Laboratory, Two-Dip, Three-Dip, Vapor Spray, Barrel Type, Automatic, Semi-Automatic, Driers, Stills and Specials.
When the job needs a degreaser . . . there's a D'OILER for the job.

mechanical process co., inc.
392 VALLEY ST. • SOUTH ORANGE, N. J.

For more data circle **412** on Reader Service Card



OLD FRIENDS MAKING NEW FRIENDS.

Copper and Nickel have been brought up together in the plating field. They plate, deposit, and alloy together—they are OLD FRIENDS.

TRIANGLE BRAND COPPER SULFATE and TRIANGLE BRAND NICKEL SULFATE as principal sources of copper and nickel in the plating field, are making NEW FRIENDS every day.

The reasons are obvious — purity, solubility, uniformity and high conductivity of their solutions result in QUALITY PLATING.

All-important "extras" found in the use of Triangle Brand Copper and Nickel Sulfates yield long-life plating performance that MAKES THE DIFFERENCE.

Specify: **Triangle Brand Copper Sulfate and Triangle Brand Nickel Sulfate for dependable plating baths.**

PHELPS DODGE REFINING CORPORATION — NICHOLS — TRIANGLE BRAND — CHEMICALS — NEW YORK, N.Y.

PHELPS DODGE REFINING CORP.

300 PARK AVE. NEW YORK 22, N.Y. ■ 5310 W. 66th STREET, CHICAGO 38, ILL.

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George R. Lawson has been appointed director of marketing of **Pennsalt Chemicals'** Industrial Division. In this newly created position, Mr. Lawson will direct the combined sales organizations of the former Sharples and Industrial Chemicals Divisions which were recently consolidated in the formation of the company's new Industrial Division.

The products of this Division include organic and inorganic industrial chemicals and numerous Sharples brand organic chemicals used largely as intermediates in the process industries. The consolidation of the distribution facilities for these products, company officials believe, will make possible more efficient sales and technical services.

Mr. Lawson joined the Pennsalt organization in 1946.

★ ★ ★

Reber C. Stupp, general manager of **Peters-Dalton Inc.**, Subsidiary of Detroit Harvester Company, has announced the appointments of **Fred J. Burke** as factory manager and **Robert G. Callison** as chief engineer.

Robert G. Callison

Fred J. Burke

Formerly chief industrial engineer of Detroit Harvester Company, Mr. Burke previously held various supervisory positions in the Lincoln-Mercury and General Products Divisions of the Ford Motor Car Company.

Robert G. Callison has been associated with Peters-Dalton for the past twenty years. During that time he has held such positions as chief estimator and most recently eastern regional sales-engineering supervisor.

★ ★ ★

Clarkson Laboratories, Incorporated, of Philadelphia, has announced the appointment of **Thomas F. O'Brien** as general sales manager of the Metal Finishing Division. In making this appointment, E. W. Heller, president of Clarkson Laboratories, states that Mr. O'Brien will have charge of sales, on a nationwide basis, of its line of materials and compounds for the metal finishing industry, and of introducing and promoting several new specialty items for electroplating.

★ ★ ★

Leonard Sax has been elected president of the **American Buff Co.,** Chicago. At the time of his election as president, Mr. Sax was secretary-treasurer of American Buff. Mr. Sax will now direct the activities of the firm's three plants.

Don't Throw Away *Buffing Compound* **NUBBINS!**

We remelt Nubbins — ship you whole bars.

Did you ever figure how many pounds are lost because your Nubbins are discarded?

Worthless Nubbins remelted and recast into uniform bars.

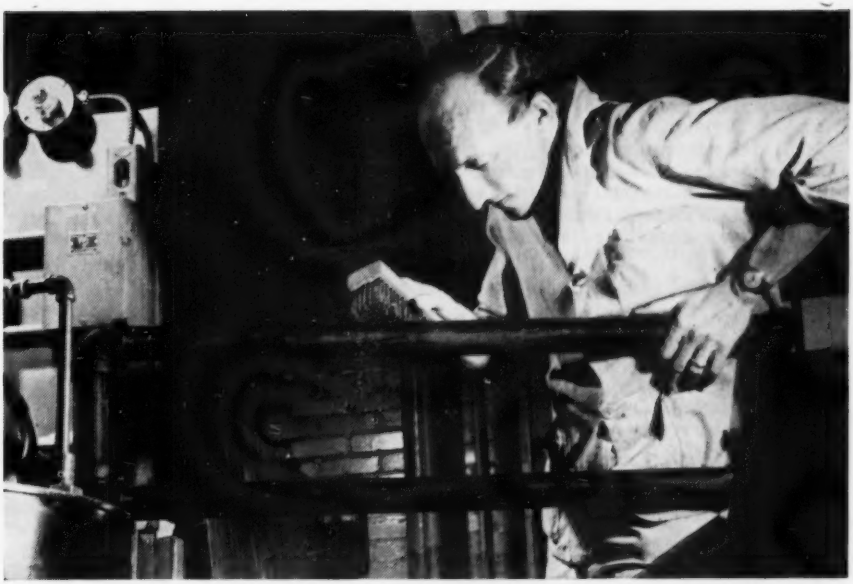
Work Done in Separate Plant.

Write, wire or phone Vinewood 3-5970

RECAST & REMELT DIVISION

McAleer MANUFACTURING CORP.
101 S. WATERMAN DETROIT 17, MICH.

For more data circle **414** on Reader Service Card



Do heating coils in your vapor degreaser often get gummed up like this? You may be using a degreasing solvent that's poorly stabilized. Read below how you can minimize this coil-cleaning job, and degrease more parts between cleanouts.

Why Nialk® TRICHLORethylene with **psp** gives you more degreasing, less downtime

It's the *stabilizer* in the trichlorethylene that determines how long you can use it safely and efficiently.

Light, heat, air, acids, and active metals such as aluminum, given time, can break down improperly stabilized trichlorethylene, making it unfit for further degreasing.

Nialk stabilizer has psp—permanent STAYING power. You never have to replenish the stabilizer in NIALK TRICHLORethylene. It's neutral, non-alkaline, works equally well with all metals.

psp means cheaper degreasing. Even after repeated distillations, this unique NIALK stabilizer actively retards the formation of degradation products in your bath.

You don't have to clean the bath nearly so often. You can degrease many more parts between cleanouts.

Get proof of Nialk's cheaper, safer cleaning. Write on your business letterhead for a revealing resumé of comparative metallurgical tests made on NIALK TRICHLORethylene and four other leading brands.

HOOKER ELECTROCHEMICAL COMPANY
1405 Union Street, Niagara Falls, N. Y.

HOOKER CHEMICALS PLASTICS

NIAGARA FALLS • TACOMA • MONTAGUE, MICH. • NEW YORK • CHICAGO • LOS ANGELES

Manufacturers of VIRGO® DESCALING SALT, VIRGO ELECTROLYTIC SALT, VIRGO MOLTEN CLEANER

For more data circle **415** on Reader Service Card

John P. McAndrews has been appointed manager of the **Du Pont Company's** Marshall Sales Development Laboratory in Philadelphia. The laboratory is operated by Du Pont's Finishes Division.

Mr. McAndrews succeeds William D. Lawson, whose appointment as manager of industrial maintenance sales in the Finishes Division in Wilmington was announced recently.

★ ★ ★

The Board of Directors of the **George L. Nankervis Company** has announced the election of **Harold M. Cherry** as president, following the recent death of George L. Nankervis, founder and former president of the company.

Mr. Cherry has been associated with the corporation since 1944 and was senior vice-president.

Claude E. Cox, Henry W. Grikscheit, Vernon G. Converse and Stanley R. Andersen were also appointed to the executive committee.

Sethco Filters Fast

FROM **START**
SELF PRIMING
instant filtration
TO **FINISH**
Automatic
Backwash
Reversal
Switch

LSIN-20V

Models equipped with corrosive resistant alloys and materials for every electroplating and industrial solution from pH 0 to pH 14. Removes particles down to one micron in size.

Sethco Mfg. Co.
70-72 Willoughby St., Brooklyn 1, N. Y. • UL 5-8940

For more data circle **416** on Reader Service Card

Harold M. Cherry

Dr. K. W. Newman

Appointment of **Dr. Kenneth W. Newman** to the position of chief process engineer has been announced by **Turco Products, Inc.**

The Turco Process Division functions as a liaison between the Sales and Technical Departments and Mr. Newman's first undertaking, according to Turco officials will be to reorganize the Process Division to improve technical service in the field.

★ ★ ★

Appointment of **Howard A. Shelley, Jr.,** as industrial sales manager in the Los Angeles district for **The Glidden Company's** paint division has been announced by A. D. Duncan, Glidden vice president and general manager of the division.

Mr. Shelley joined The Glidden Company in 1949 and was assigned to the firm's central division technical service department. Three years later, he was appointed assistant sales manager of the central division. In 1956 he was appointed national defense coordinator for Glidden.

★ ★ ★

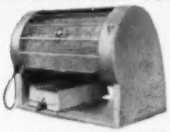
Andrew J. Snow has been promoted to sales manager of the Furnace and Oven Division of **W. S. Rockwell Co.,** 200 Eliot St., Fairfield, Conn. Mr. Snow had been a sales engineer for the company until his promotion.

TUMBLE
GRAV-I-FLO
FINISH

Gives you these extras in your tumble finishing!

1. Produce Consistent, Uniform, Higher Lustre Finish!
2. Handles 25% More Volume in 30% Less Floor Space!
3. Super-Brite Chips and Compounds Cut Faster, Slash Processing Time!
4. Eliminate Transfer of Parts Between Roughing and Finishing!
5. Obtain Smoother Surface Preparatory to Plating!
6. Cut Direct-Labor Costs!

COMPLETE EQUIPMENT, ACCESSORIES AND SUPPLIES

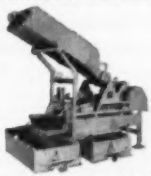


MODEL 66"—TWO COMPARTMENTS

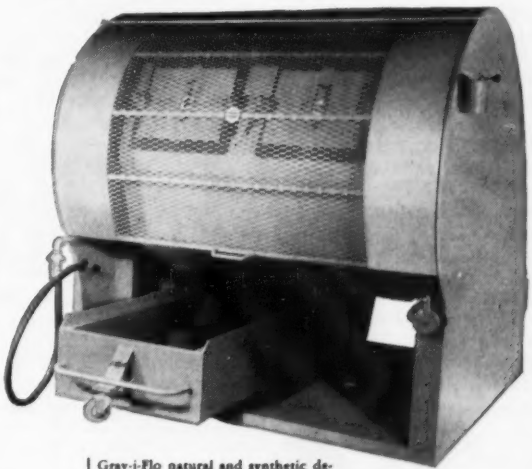
MODEL 36"—TWO COMPARTMENTS

MODEL 32"—TWO COMPARTMENTS

MODEL 24"—TWO COMPARTMENTS



CHIP SEPARATOR AND GRADER



MODEL 48"
TWO COMPARTMENTS

COMPOUNDS Grav-i-Flo natural and synthetic deburring and finishing chips and highly developed compounds consistently outperform every type of tumbling process offered on the market.

SEND FOR CATALOG showing complete line of Grav-i-Flo equipment, accessories and supplies.

Grav-I-Flo Corp., Dept. PF-5, Sturgis, Michigan

☐ Send complete catalog. ☐ Have Sales Engineer call. ☐ We are sending samples.

Company_____

Name_____ Position_____

City_____ State_____

GRAV-I-FLO CORPORATION, 400 Norwood Avenue, Sturgis, Michigan

For more data circle **417** on Reader Service Card

Appointment of **Carl F. Graham** as director of research and development has been announced by **Turco Products, Inc.**, manufacturer of specialized industrial chemical processing compounds.

Mr. Graham formerly had been with Wyandotte Chemicals Corporation as manager of analytical research.

★ ★ ★

William H. Wendel, formerly vice-president of **The Carborundum Company** and general manager of the Coated Abrasives Division, has been elected to the newly created position of group vice president, in charge of four divisions of the company.

The four divisions whose activities will be coordinated by Mr. Wendel are the Coated Abrasives Division, Wheatfield, N. Y.; Curtis Machine Division, Jamestown, N. Y.; Globar Division, Niagara Falls, N. Y.; and the Stupakoff Division, which produces electrical components and cutting tools.

Carborundum has also announced several other promotions and new appointments.

A new position, "assistant to the president on international activities," has been created. Promoted to this post is **A. Francis Politi,** formerly head of Carborundum's Brazilian plants Carborundum S.A. at Sao Paulo, Brazil, and Electro Metalurgica Abrasivos, Saltos, Ltda., Sao Paulo, Brazil.

George E. McGuire, formerly export manager of the company has been promoted to assistant vice president and will be a consultant to the president on export sales and international activities of the company.

Jacques deBrabant, regional manager in Paris, France, has been promoted to president, Carborundum S. A. (Industria Brasileira de Abrasivos), Sao Paulo, Brazil, and vice president, Electro Metalurgica Abrasivos Saltos, Ltda., Sao Paulo, Brazil.

John F. Claydon, formerly sales manager of the Coated Abrasives Division, has been appointed general manager of this division.

Herbert P. Dales, formerly assistant sales manager, has been promoted to sales manager of the Coated Abrasives Division.

J. G. Khoury, formerly field sales manager for coated abrasives in Detroit, has been promoted to assistant sales manager of the division.

A. R. Perry has been promoted to coated abrasives field sales manager of the Detroit district.

K. H. Wisby, Tulsa, Oklahoma, has been promoted to field sales manager of the Southwestern District for the Coated Abrasives Division.

H. C. Smith, Jr., district manager, Southwestern District, St. Louis, Mo., has been promoted to manager, Merchandising Branch of the Coated Abrasives Division.

Other appointments in the Merchandising Branch include **Clifford N. Floyd** and **Harold J. Good,** who have been promoted to field sales managers in the Pacific District.

E. M. Matter has been promoted to field sales manager for merchandising in the Detroit District.

Fred Bonacker, sales manager and assistant vice president of the Bond-

Thompson Fast-Dry Production Primers can be used on any clean steel surface . . . you can topcoat them in just a few minutes . . . and they give you excellent adhesion and corrosion-resistance. These superior primers come in five colors and white. Write for literature, including technical data.

Industrial Finishes Since 1847

THOMPSON and COMPANY
1010 ALLEGHENY AVE., OAKMONT, PA.

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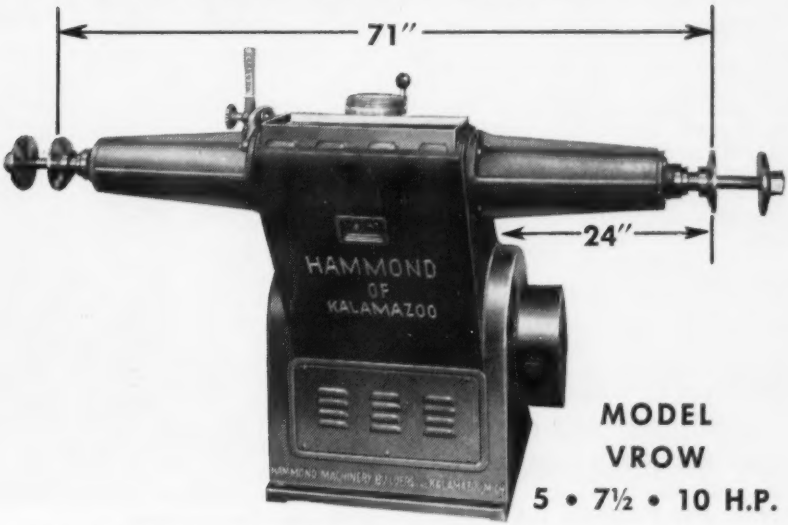
Hammond OF KALAMAZOO

WIDE—SWING

POLISHING AND BUFFING LATHE



MODEL
VROW
5 • 7½ • 10 H.P.

Ideal for bulky parts. Spindle overhang and extended bearing housings enable two operators to work without interfering with each other.

Hammond WIDE SWING Variable Speed and Single Speed Polishing Lathes are available with one or two *independent spindles.*

Other models available with a capacity up to 50 HP. *Write for catalog* showing America's most complete line of Polishing and Buffing Lathes.

Hammond Machinery Builders INC.

1622 DOUGLAS AVENUE • KALAMAZOO, MICHIGAN

For more data circle **419** on Reader Service Card

ed Abrasives Division, has retired after 45 years of service with the company.

Fred W. Scott, formerly manager of the Merchandising Branch of the Coated Abrasives Division, has been promoted to sales manager of the Bonded Abrasives Division.

Henry J. Jeffers, field sales manager in Detroit, has been promoted to the newly created position of assistant sales manager, Bonded Abrasives Division.

Pending selection of Mr. Jeffers' successor in Detroit, **W. D. Dickerson,** Detroit district manager, will be acting field sales manager of the Bonded Abrasives Division in Detroit.

W. H. Crocker, supervisor of industrial abrasive sales in the Southwestern District, has been promoted to field sales manager of the Bonded Abrasives Division, Southwestern District, with headquarters in St. Louis, Missouri.

★ ★ ★

Retirement of a key executive and promotion of two others in the field sales organization of **Diamond Alkali Company,** Cleveland, Ohio, have been announced by W. H. McConnell, vice president in charge of sales.

C. F. Wolters, Jr.

Robert R. Wood

Olin Smith

The appointments become effective October 1, when **C. F. Wolters, Jr.,** a 37-year sales veteran and since 1943 branch manager of Diamond's Philadelphia Branch Sales Office, will retire from the company.

Olin Smith, assistant Chicago branch sales manager for Diamond for the past two and a half years, succeeds Mr. Wolters at Philadelphia upon his retirement.

Robert R. Wood, special staff assistant in the Sales Department at the company's national headquarters in Cleveland since September, 1955, takes over Mr. Smith's assignment at Chicago.

★ ★ ★

The following appointments to the sales-service force of **Parker Rust Proof Company** have been announced: **D. A. Golby** and **J. E. Lewis** have been assigned to the South Central Region Office. Mr. Golby will live in Pittsburgh and cover accounts in that

QUALITY EQUIPMENT
PRICED RIGHT AND READY FOR IMMEDIATE SHIPMENT

BUFFING AND POLISHING EQUIPMENT

100 Hammond—Divine—U. S. Electric—Holland — Standard Electric — L'Hommedieu single speed and variable speed buffing and polishing machines. 1 to 20 HP.

6 Rotary Machines: Hammond—Acme—Packermatic.

Complete buffing systems for above machines, including hoods, cyclones, dust boxes, pipes, motors and blowers; various sizes.

Semi-automatic machines: Buffalo—Hammond Acme—Divine—Production.

ALL EQUIPMENT IN STOCK
INSPECTION INVITED

all quoted subject to prior sale.

J. HOLLAND & SONS, INC.
485 KEAP ST., B'KLYN, N. Y., STagg 2-2022

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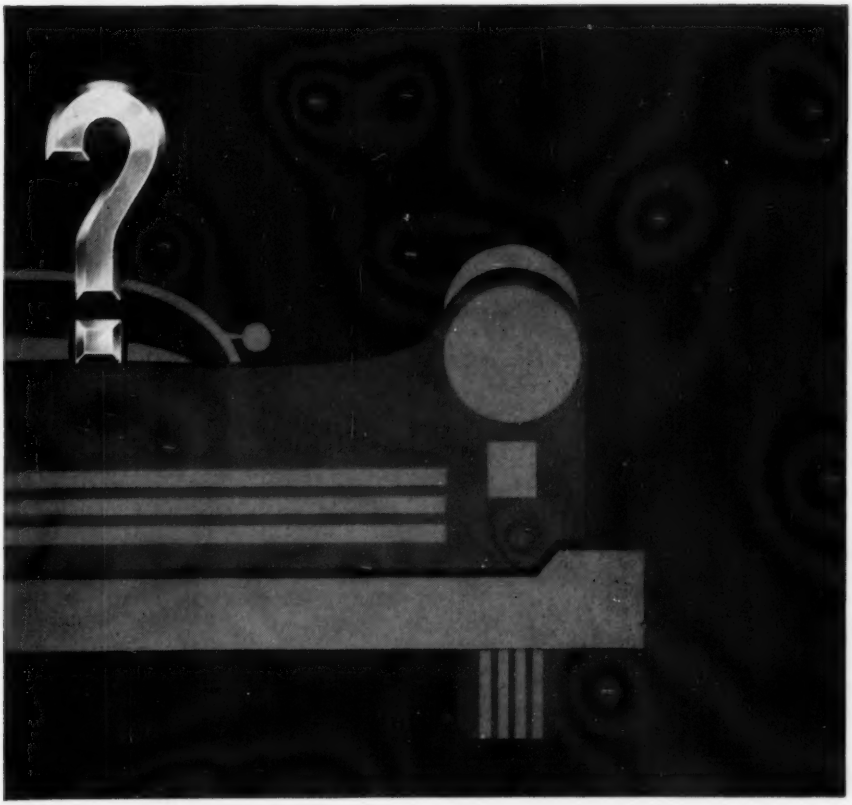


Grill Diamond's service department on chrome plating

Call in DIAMOND technical specialists when you run into a chrome-plating problem. These experienced men work only on customers' questions. They deliver complete, profit-making answers. Their service is free.

In making chromic acid, DIAMOND controls quality through every step. DIAMOND experience begins with importing the chrome ore and making the soda ash. It includes production and delivery . . . even standing by your side, if you wish, to help you consistently get top-quality plating results at low cost.

DIAMOND facilities—two chromic acid plants and nine warehouses and sales offices across the country—assure you uninterrupted service from a dependable source of supply. DIAMOND ALKALI COMPANY, 300 Union Commerce Building, Cleveland 14, Ohio.

Diamond Chromic Acid

For more data circle **421** on Reader Service Card

area. Mr. Lewis will cover accounts in northern and central Ohio.

W. N. Jones has been transferred from the Research and Development Department to the Sales Department, where he has been assigned to the Cold Forming Division in Detroit.

R. E. Covert has been assigned to the Central Region Office, in Detroit.

L. M. Thul has been promoted to automotive manufacturing trade sales manager, coated abrasives division, by **Minnesota Mining & Manufacturing Co.**

Two other personnel changes within the division were the promotion of **Donald J. Scholten** to central region sales supervisor, and **Ellsworth W. Erickson** to assistant superintendent of factory quality control.

★ ★ ★

C. E. Fuller, formerly sales promotion manager in the Chicago home office, has been named manager of the recently opened **Binks Manufacturing Co.** Atlanta Branch.

The branch will serve Georgia, North and South Carolina, Virginia, Florida, Alabama, Tennessee, Mississippi, southern Kentucky and southern West Virginia.

Factory-trained specialists at the new branch will repair paint spray guns, pumps, compressors, oil and water extractors and the other items in Binks' finishing equipment line.

The McEwen Cherry Company, 20-year representatives of the Binks Manufacturing Company in the southeastern territory, will continue to handle all jobber sales contacts.

Henry R. Merrill

C. E. Fuller

Henry R. Merrill, since 1955 general sales manager of **Behr-Manning Co.,** a division of Norton Company, has been appointed vice president in charge of sales.

Mr. Merrill has been a director of the coated abrasives and pressure-sensitive tape firm since 1954, and serves also on the directorate of Behr-Manning (Canada) Ltd.

★ ★ ★

Richard Tucker has retired as vice president of the **Pittsburgh Plate Glass Company.**

Mr. Tucker entered semi-retirement on January 3, 1955, when he relinquished the title of executive vice-president of Pittsburgh Plate Glass Company. During the two-year interim period, he continued to serve as a vice president and supervised Canadian and foreign operations, the export department, glass research, and as president of a Belgian subsidiary.

MORSE
VERTICAL DRUM TRUCK
ROCK-A-DRUM

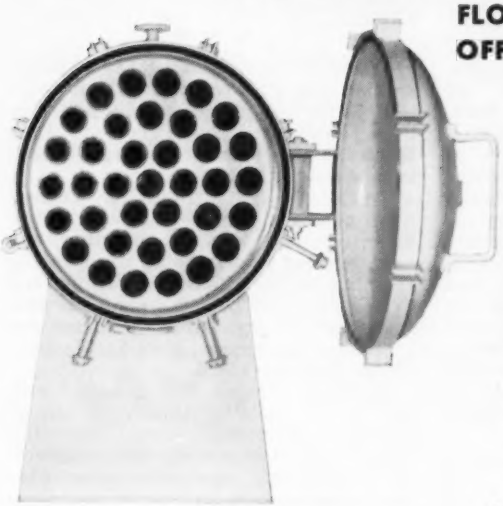
Picks up 55 gal. drums, rolls them over for side draining. Becomes a rugged stand on 3" wheels.
MORSE MFG. CO., INC. 762 W. Manlius St. East Syracuse, N.Y.

For more data circle **422** on Reader Service Card

Telephone collect for free brochure on
STRIPPING COPPER
with
McKeon's "Liquid Sulphur"
Economical, fast, non-electrolytic.
Sulphur Products Co., Inc.
McKeon Bldg., 621 W. Pittsburgh St., Greensburg, Pa.

For more data circle **423** on Reader Service Card

New!...TUBULAR FILTERS
By INDUSTRIAL



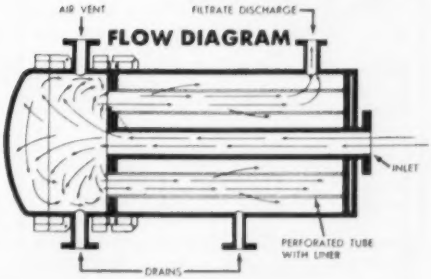
FLOW FROM INSIDE TUBE OFFERS NEW CONVENIENCE

- ★ Unequaled simplicity of maintenance.
- ★ Solids can be recovered in dry form.
- ★ Liners are easy to replace and inexpensive.
- ★ Ideal for intermittent or continuous operation.
- ★ Chamber can be emptied without losing cake.
- ★ No unfiltered "heel."
- ★ Can be used with or without pre-coat.
- ★ Ideal for polishing . . . as a trap filter . . . and as a scavenger for larger filters.

NEW SIMPLIFIED OPERATION

The filter is prepared for use by simply rolling flat sheets of filter paper and inserting them in the tubes, which are designed to force the paper snugly against the tube wall.

EASY TO CLEAN . . . Filter papers are simply withdrawn and replaced. Even the tubes are easy to remove, held in place by a simple rubber O-Ring. Except for the cover there are no nuts and bolts to handle.



FOR FULL DETAILS
WRITE FOR BULLETIN 123-1155

Industrial
INDUSTRIAL
FILTER & PUMP MFG. CO.
5904 OGDEN AVENUE • • CHICAGO 50, ILLINOIS

For more data circle **424** on Reader Service Card

TRAINING COURSES

The second **"Paint Short Course for High School Chemistry Teachers"** will be conducted from June 25—July 2, 1957, at **North Dakota State College** in Fargo, N. D. This course, sponsored by the **Federation of Paint and Varnish Production Clubs** as part of its educational activity, is being conducted to assist high school chemistry teachers from the United States and Canada to interest their students in the paint industry in order to help the fast-growing industry obtain the scientists, administrators, and executives it will need in years to come. The teachers will be better able to describe to their students the present status and the future challenge of chemistry in general and of protective coatings chemistry in particular after they have completed the prescribed course of study.

Dr. Wouter Bosch

★ ★ ★

Training classes in the proper operation and maintenance of Bede Airless Spray Painting equipment have been announced by President Eric Nord of the **Bede Products Corporation,** Amherst, Ohio.

To date, seven introductory classes have been conducted. A new training and technical services building has been erected and is being used as the training center. Classes are conducted over a four-day period during the second week of each month. Classes are scheduled as follows: May 14-17; June 11-14; August 13-16.

Subjects covered during each training period include: theory of airless process; equipment study, including equipment disassembly and reassembly; equipment operation; preventative maintenance and repair; general study of airless finish formulations; airless finishing techniques.

Classes are open to all interested persons, including present airless equipment users, chemists or paint formulators, equipment manufacturers and others. There is no tuition charge. For application blanks or additional information regarding the Bede Airless Training School, write to R. T. Schafer, Bede Products Corporation, Amherst, Ohio.

LEARN AND SAVE MONEY!

"I spent a good many hours trying to discover a new dip for passivating zinc. It didn't seem right to use a dip that cost $1 a gallon for so cheap a finish; however thanks to some of your teachings I came up with something that cost me 18 cents a gallon," writes plating foreman Ben Sorrentino. Likewise you will learn how to save money in your plating operations when you enroll for ELECTROPLATING KNOW HOW training. Write JOSEPH B. KUSHNER, ELECTROPLATING SCHOOL, 115 BROAD ST., STROUDSBURG 10F, PA., TODAY!

For more data circle **425** on Reader Service Card

LANLY FINISHING OVENS
THE LANLY COMPANY • 760 PROSPECT AVE
CLEVELAND, OHIO
WRITE FOR INFORMATION AND LITERATURE

For more data circle **426** on Reader Service Card

"GRIPALLOY"
. . . Attractive satin sheen primer in black and colors . . .
. . . Amazing tight adhesion to 25 different metals as reported by a large electrical manufacturer . . .
. . . Excellent resistance to Salt Spray, Gasoline and Solvents.
TENAX, Newark, N. J.
Lacquers—Enamels
Synthetics—Varnishes

For more data circle **427** on Reader Service Card

SPEED UP PRODUCTION with DOUBLE-ACTION DRYING

Air-dry as you spin-dry with the new, improved New Holland Model 20 KREIDER CENTRIFUGAL DRYER

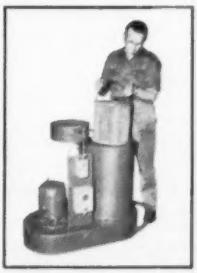
● Now you can *spin-dry* small parts in continuous *fresh air* in as little as 15 seconds.

Double-action drying with peak-efficiency evaporation gives smooth moisture-free surfaces . . . reduces your finishing problems by eliminating the scarring frequently responsible for costly "rejects."

Your operators will be able to boost production, cut costs way down when you install New Holland's easy-to-run Model 20 Kreider Centrifugal Dryer.

SAFER because of Mechanical and Electrical Control Features!

To unlock cover and remove basket, operator must depress foot brake, stop spinner.



Machine cannot start with open cover. Ample clearance allowed for quick loading.

To start spinner, operator must first close cover completely.

SPECIFICATIONS:

1 h. p. motor—220, 440, 550 volts—2- or 3-phase—spins 75-lb. loads at 825 r.p.m. . . . Quiet V-belt drive . . . 30-blade suction turbine draws air through spinner . . . . Arc-welded steel-plate construction . . . Heavy-gauge woven steel mesh basket . . . Weight: 490 lbs. . . . Floor space: Just under 5 sq. ft. . . . Meets N.F.C. specs. **Optional:** J.I.C. Control: Mounted on right, left side or wall. 160° supplementary heat: 2350-watt Chromalox, or steam.

Send for illustrated 4-page folder. Address Dept. F-557. New Holland Machine Company, New Holland, Pa.

NEW HOLLAND MACHINE COMPANY
NEW HOLLAND, PA.

For more data circle 428 on Reader Service Card

A recent class at the Binks Manufacturing Company's tuition-free spray painting school. Conducted every month of the year except July and August, the school provides instruction in the latest manual and automatic spray painting equipment and application techniques.

A course on manual and automatic spray painting equipment and techniques is offered by the **Binks Manufacturing Company's** free spray painting school.

The school is conducted every month of the year except July and August. Applications are now being accepted for the following two sessions of the 1957 spring term: May 6 through 10, and June 3 through 7. The company cautions that because size of the classes is limited, reservations for attendance should be made as far in advance as possible.

In addition to a thorough indoctrination into actual spray painting, students learn the operation and servicing of spray guns, paint circulating systems, material handling pumps, oil and water extractors, flocking equipment, compressors and auxiliary equipment.

Although classes are tuition-free, each student is responsible for his transportation and living expenses while in Chicago. For reservations and additional information on the Spring sessions of the Binks spray painting school write to Binks Manufacturing Co., 3118-40 Carroll Ave., Chicago 12, Ill.

SOCIETIES

Twenty-one European metal finishers were guests of U. S. plating shop owners and managers recently in a study-tour arranged through a New York travel association. The group visited more than a dozen job and captive shops in their 20-day junket which took them to New York, Cleveland, Detroit, Chicago, Baltimore and New England.

The itinerary was planned with the help and cooperation of the **National**

DEAN THERMO-PANEL COIL TAKES THE PLACE OF PIPE COILS

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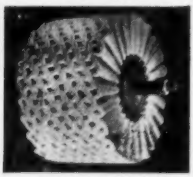

with 45° Spoke Buffs
Patented spoke mounting principle maintains best cutting angle of 45° for faster, smoother cutting with less pressure and no streaks. Ventilation from 24 openings.

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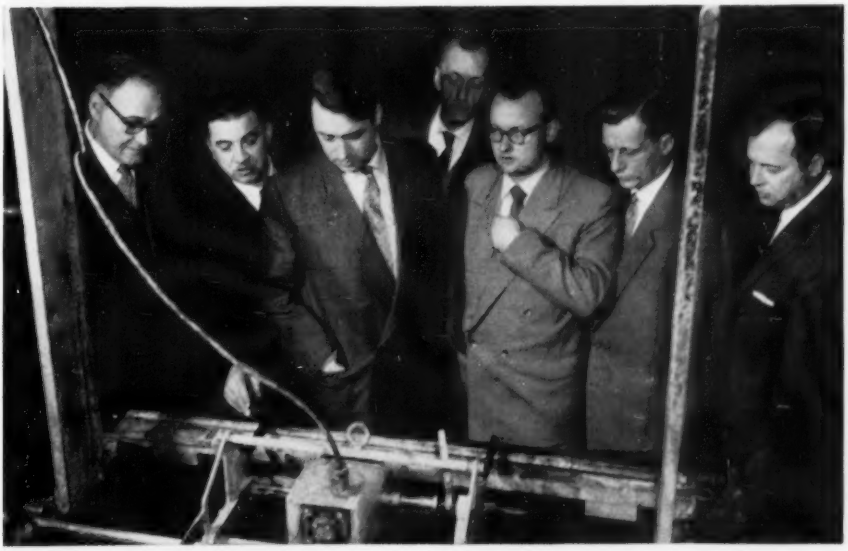
Association of Metal Finishers. Local N.A.M.F. affiliates who played host to the visitors included the **Masters Electro-Plating Association, Inc., Plating Trades Association of Ohio, Chicago Electro-Platers Institute,** and the **Plating Institute of Michigan.** Detroit and Chicago branch members of the **American Electroplaters' Society** also took part.

Composed of German and Austrian plating experts, the visitors marveled at U. S. automated plating machines. Plants and shops visited included: Albert's Plating Works, Inc., Brooklyn, N. Y.; Platers' Research, Inc., New York, N. Y.; Pyro Metal Finishing, Inc., Newark, N. J.; Lycoming Div., AVCO, Bridgeport, Conn.; Nutmeg Chrome Corp., West Hartford, Conn.; National Research Corp., Cambridge, Mass.; General Hard Chrome Corp., Advance Plating Co., Industrial Plating Co., Manufacturers' Plating Co., Cleveland, Ohio; Elyria Plating Co., Elyria, Ohio; several plants and shops in the Detroit, Mich., area; Allied Research Products, Inc., and Almag Corp., Baltimore, Md.; Northwestern Plating Works, Adolph Plating, Inc., Western Electric Co., and Hotpoint, Inc., Chicago, Ill.

S. C. Taormina, M.E.P.A. executive secretary, was in charge of arrangements in the New York area; **Lewis Glassner,** C.E.P.I. executive secretary, made plans for the Chicago tour; **J. Robert Greenwell,** president of Reliable Plating Company, and N.A.M.F. vice president, was in charge of the Chicago plant visitation.

In Detroit, N.A.M.F.-er **Glen H. Friedt, Jr.,** United Platers, Inc., directed activities, assisted by P.I.M. Executive Secretary **James D. Mueller** and local branch members of the A.E.S.

The Cleveland area plans were



During their tour of the electroplating industry in Chicago, the German-Austrian electroplaters toured the plant of Northwestern Plating Works. Here, Paul Glab (second from left), plating superintendent for Northwestern, describes the operation of one of the many plating barrels in use in his plant. At the extreme right is John F. Jumer, president of Electro-Glo Company, who was luncheon host for the group of European visitors. (Photograph courtesy National Association of Metal Finishers, Cedar Grove, New Jersey.)

Fig. 1—Harvey Hunt, Alert Supply Co., was general chairman for 27th Annual Meeting.

mapped by N.A.M.F. President **John Palik, Jr.**, National Plating Corp., and **G. David Zeile, Jr.**, P.T.A.O. executive secretary. **Joseph Eisenberg**, Almag Corp., N.A.M.F. director, was in charge of the Baltimore program.

★ ★ ★

The **Los Angeles Branch, A.E.S., held its 27th Annual Educational Session and Dinner Dance** on March 23 at the Hotel Ambassador, Los Angeles, Calif. The accompanying photos of officials and speakers for this event were supplied through the kindness and cooperation of **G. Stuart Krentel**, manager of technical sales-service, Kelite Corporation, Los Angeles.

Fig. 2—Emmett H. Babcock, Convair Division of General Dynamics Corporation, Pomona, California, served as educational chairman.

Fig. 4—Leo Missel, Lockheed Aircraft Corporation, Missile Systems Division, discussed his topic, "Electroplating on Titanium Alloy."

Fig. 3—Dr. Walter R. Meyer, president of Enthone, Incorporated, New Haven, Conn., spoke on "Electroplating Solutions in Action."

Fig. 5—A. E. S. President Dr. Samuel Heiman, Philadelphia Rust Proof Co., Inc., spoke on "Some Practical Electroplating Problems."

MEETINGS

P. J. Whiteway, Jr., of G. D. Wetherill Varnish Co., Camden, N. J., has been named chairman of the Host Committee for the **39th Annual Meeting of the Federation of Paint and Varnish Production Clubs,** which will be held at the Bellevue-Stratford

P. J. Whiteway, Jr.

Eugene H. Ott

Hotel in Philadelphia, Pa., October 30 through November 2.

Assisting Mr. Whiteway will be the following host subcommittee chairmen: Registration, Co-Chairmen Robert Toothill, of G. D. Wetherill & Co., Philadelphia, and Walter Bayer, of Sinclair Refining Co., Marcus Hook, Pa.; Operations, Bob Cox, of Gilbert Spruance Co., Philadelphia; Banquet, John Williams, of Calbar Paint & Varnish Co., Philadelphia; Entertainment and Dance, Harold Gough, of Finnaren & Haley, Inc., Philadelphia; and Ladies' Entertainment, Mrs. Harold Gough.

The Host Committee, all members of the Philadelphia Paint and Varnish Production Club, will be in charge of the convention arrangements for the Federation Meetings Committee, of which **Eugene H. Ott,** of Ferbert-Schorndorfer Co., Cleveland, Ohio, is chairman. Mr. Ott stated that the official announcement of the Annual Meeting, with enclosed hotel reservation forms, will be distributed soon.

HONORS

George Parisho, Cowles Chemical Company representative in the Midwest, has received an award in a nationwide sales contest involving all of the company's salesmen, it has been announced by C. C. Bassett, director of sales. Mr. Parisho won first place in the metal finishing department by exceeding his quota by the greatest amount, and third place in the company-wide contest. He lives in Bettendorf, Iowa.

George Parisho

NECROLOGY

George A. Fyrberg, production manager of **Norton Company's** Abrasive Division, died suddenly April 6.

Mr. Fyrberg first joined Norton Company in 1915 as a wheel finisher in the truing department. He was appointed to his latest position in 1952.

MEETINGS of INTEREST to FINISHERS

May 11. 39th Annual Banquet, Masters' Electro-Plating Association of New York, Plaza Hotel, New York.

May 12-16. Electrochemical Society Meeting, Statler Hotel, Washington, D. C.

May 24-25. Annual Symposium, Pacific Northwest Paint and Varnish Production Clubs, Winthrop Hotel, Tacoma, Wash.

June 2-5. 25th Anniversary Convention and Exhibit, Institute of Appliance Manufacturers, Netherland-Hilton Hotel, Cincinnati, Ohio.

June 16-20. 44th Annual Convention, A.E.S., Sheraton-Mount Royal Hotel, Montreal, Canada.

For Free Literature Circle Numbers on Card Inside Front Cover

PRODUCT LITERATURE

26. Flat-Polishing Machines
Information on abrasive belt grinding and polishing machines designed to be used for polishing sheets, plates, strips, or blanked-out shapes in flat form. The Hill Acme Co., 1209 W. 65th St., Cleveland 2, Ohio.

27. Silver Anodes
Data on various sizes and shapes of new, shaped, extruded silver anodes that have controlled grain size, thus minimize shedding. The American Platinum Works, 231 New Jersey Railroad Ave., Newark 5, N. J.

28. Baking Ovens
Information on various types and sizes of paint-baking ovens. Burdett Manufacturing Co., 4916 Monitor Ave., Chicago 38, Ill.

29. Chrome Plating Machine
Literature describes the advantages of the Lasalco Circular Chrome Plater. Lasalco, Inc., 2820 LaSalle St., St. Louis 4, Mo.

30. Buffing Compound Nubbins
Information on recovering buffing compound nubbins for further use in recast form. Recast and Remelt Div., McAleer Mfg. Corp., 101 S. Waterman, Detroit 17, Mich.

31. Stripping Copper
Brochure tells how to strip copper coatings from the base metal with McKeon's Liquid Sulphur. Sulphur Products Co., Inc., McKeon Bldg., 621 W. Pittsburgh St., Greensburg, Pa.

32. Copper and Nickel Plating
Information on the advantages of using Triangle Brand Copper Sulfate and Triangle Brand Nickel Sulfate in plating baths. Phelps Dodge Refining Corp., 300 Park Ave., New York 22, N. Y.

33. Steam-Spray Painting
Information on Pantex Speedylectric Steam Generators and Steam Superheaters for use in supplying the closely controlled steam necessary for successful steam-spray painting by the Du Pont process. Pantex Manufacturing Corp., Box 660 AP, Pawtucket 5, R. I.

34. Pre-Cut Masks
Bulletin 160-C describes pre-cut masks that are useful in masking odd-shaped areas. Samples available. W. H. Brady Co., 746 W. Glendale Ave., Milwaukee 9, Wisconsin.

35. Scratch Thickness Gage
Description of instrument that can be used to measure dry thickness of coatings applied to any base. Gardner Laboratory, Inc., P. O. Box 5728 PF, Bethesda 14, Md.

36. Automatic Polishing Equipment
Literature describes complete line of automatic polishing and buffing machines. Acme Manufacturing Co., 1400 E. Nine Mile Rd., Detroit 20, Mich.

37. Chromate Conversion Coatings
Technical Data File contains information on chromate conversion coatings for corrosion protection, use as a paint base, and in decorative finishing. Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 5, Md.

38. Centerless Buffs
Patented pre-assembly feature permits making up complete buffing heads in advance, allowing faster changeovers. American Buff Co., 2414 S. La Salle St., Chicago 16, Ill.

39. Paint Base
Bulletin 1380 describes various types of ACP Granodine, gives information which is helpful in selecting the proper type for a particular application. American Chemical Paint Co., Ambler 14, Pa.

40. Spray Booth Strip-Coating
Information on Liquid Envelope, a material that can be sprayed on spray booth walls, stripped off when overspray accumulates. Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J.

41. Metal Parts Washers
Complete information on a line of metal parts washers and surface-treatment machines. G. S. Blakeslee & Co., 1844 S. Laramie Ave., Chicago 50, Ill.

42. Tack Cloth
Information on an impregnated cloth that can be used to wipe surfaces before painting to ensure a grit-free surface. Bond Chemical Products Co., 2639 N. Clybourn Ave., Chicago 14, Ill.

43. Phosphorized Copper Anodes
Literature tells how Anaconda "Plus-4" Anodes help in making all the copper move uniformly through an acid-copper solution to the object being plated. These anodes contain a small percentage of phosphorous, which is said to aid this process. American Brass Co., Waterbury 20, Conn.

44. Buffing and Polishing Compounds
Bulletin Co-103 contains 23 pages of information and recommendations for obtaining the best results from buffing and polishing compounds. Detailed analysis of each type of compound, its uses and characteristics. Includes information on automatic application equipment. Hanson-Van Winkle-Munning Co., Church St., Matawan, N. J.

45. Conveyors
Bulletin No. 41 describes conveyors that can be used to transport materials through finishing operations. The E. W. Buschman Co., 4516 Clifton Ave., Cincinnati 32, Ohio.

46. Set-Up Wheels
Booklet 14 tells how to select the right abrasive grain or powder for making a polishing wheel give maximum performance at minimum cost. The Carborundum Co., Niagara Falls, N. Y.

47. Acid-Resistant Maintenance Coating
Technical Bulletin E-900 describes Series E-900 coatings, modified epoxy formulations that give excellent chemical and abrasion resistance. The Ceilcote Co., Inc., 4848 Ridge Rd., Cleveland 9, Ohio.

48. Rhodium Electroplating Solutions
Information on the use of rhodium for contact surfaces of switches, waveguide parts and other electrical equipment. Sigmund Cohn Mfg. Co., Inc., 121 S. Columbus Ave., Mount Vernon, N. Y.

49. Washing Machine Cleaner
QC Washing Machine Cleaner is said to give excellent wetting, penetrating, soil loosening and emulsifying power without excessive foaming. Cowles Chemical Co., Inc., 7016 Euclid Ave., Cleveland 3, Ohio.

50. Heat Transfer
Bulletin 355 gives 52 pages of information on heat transfer. Dean Thermo-Panel Coil Div., Dean Products, Inc., 622 Franklin Ave., Brooklyn 38, N. Y.

51. Ultrasonic Cleaning
Information on use of ultrasonics in cleaning and pickling metals. Branson Ultrasonic Corp., 26 Brown House Rd., Stamford, Conn.

52. Phosphate Coatings
Information on a complete line of phosphate coatings, including zinc-iron phosphates, iron phosphates and phosphates for cold extruding. Detrex Chemical Industries, Inc., Box 501-A, Detroit 32, Mich.

53. Fixture-Mounted Barrel Finishing
Information on the Spin-Finish method of pre-plate finishing. Grav-I-Flo Corporation, Dept. PF-5, 400 Norwood Ave., Sturgis, Mich.

54. Bright Nickel Plating
Information on Nubrite, a bright nickel plating solution that is said to plate bright over a wide range; have high tolerance to impurities; remain ductile after long operation; and be simple to operate and control. Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

55. Waste-Recovery Systems
Reprints of articles and literature on Industrial waste recovery systems. Industrial Filter & Pump Mfg. Co., 5904 Ogden Ave., Chicago 50, Ill.

56. Build Your Own Oven
Information on construction of drying panels and complete ovens using interlocking DriQuik Oven Sections. DriQuik Div., Dry Clime Lamp Corp., Greensburg, Ind.

57. Cleaning Machinery
Information on various types of machines for cleaning and protecting metal parts prior to painting or plating. Magnus Chemical Co., Inc., 208 South Ave., Garwood, N. J.

58. Bronze Plating Process
Data on a simple bronze plating process. Metal & Thermit Corp., Rahway, N. J.

59. Protecting Equipment from Chemicals
Information on Miccrosol coatings for protecting tanks, ducts, plating racks and other equipment from chemicals and abrasion. Michigan Chrome & Chemical Co., 8615 Grinnell Ave., Detroit 13, Mich.

60. Metal Processing Equipment
Bulletins show complete line of parts washers, phosphatizing units and spray pickling equipment. Newcomb-Detroit, 5761 Russell St., Detroit 11, Mich.

61. Shortcut
Booklet entitled "Here's the Best Shortcut in the Field of Organic Finishing." Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

62. Tack Cloth
Information on tack rags that are useful in cleaning metal surfaces before painting. Detro Sales Co., Inc., Culver City, Calif.

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63. Thermo-Setting Acrylic Enamel
Literature describes Duracron, a thermo-setting acrylic enamel that is said to be advantageous in finishing refrigerators, home laundry equipment, ranges and air conditioning units. This organic finish will retain color and gloss for prolonged periods at temperatures up to 400 deg. F. Pittsburgh Plate Glass Co., Industrial Sales Div., 1 Gateway Center, Pittsburgh, Pa.

64. Zinc Addition Agent
Technical information on Proglo 100, a full bright cyanide zinc addition agent in powder form for barrel, still, semi- and full-automatic plating solutions. Promat Div., Poor & Co., Dept. PF, 851 S. Market St., Waukegan, Ill.

65. Electrostatic Painting
Brochure gives details on electrostatic painting, includes numerous case-history examples of both large and small manufacturers who are using electrostatic painting. Ransburg Electro-Coating Corp., Barth and Sanders, Indianapolis 7, Ind.

66. Specialized Washer
Information on a machine that is designed for washing parts between machining operations. Ransohoff, Inc., 610 N. Fifth St., Hamilton, Ohio.

67. Burnishing Compounds
Bulletin describes various burnishing, tumbling and cleaning compounds. Rutley Industries, Inc., 415 Greenwich St., New York 13, N. Y.

68. Filter
Information on solution filters designed to handle corrosive solutions. Sethco Mfg. Co., 70-72 Willoughby St., Brooklyn 1, N. Y.

69. Cleaning and Phosphatizing
Illustrated literature on Divobond and Diversey Cleaner No. 519. The Diversey Corporation, 1820 Roscoe St., Chicago 13, Ill.

70. Paint Thinners
Information on various solvents for reducing the viscosity of organic finishes. The Solvents and Chemicals Group, 2540 W. Flournoy St., Chicago 12, Ill.

71. Why Hot Spray?
Recently revised booklet gives case histories, questions and answers about this method of paint application. Spee-Flo Co., Dept. PF-28, 720 Polk Ave., Houston, Texas.

72. Plated Circuits
Information on equipment for producing plated electrical circuits. Frederic B. Stevens, Inc., 1800 Eighteenth St., Detroit 16, Mich.

73. Belt-Driven Plating Barrel
Catalog describes and illustrates belt-driven plating barrels, discusses advantages of using such a barrel. The Stutz Co., 4410 Carroll Ave., Chicago 24, Ill.

74. Brass Plating Solution
Technical bulletin discusses brass plating. True Brite Chemical Products Co., Box 31, Oakville, Conn.

75. Cleaning Chemicals
Folder describes various products useful in cleaning metals, barrel finishing, deoxidizing aluminum, removing buffing compound, electrocleaning, neutralizing after pickling, spray booth maintenance, paint stripping, and rust and scale removal. Includes data on how to use, temperatures, and so on. Wyandotte Chemicals Corp., Wyandotte, Mich.

76. Technical Article
Reprint of a technical article entitled "The Use of Filters in Electroplating," by J. B. Mohler. Alsop Engineering Corp., 1205 Keen St., Milldale, Conn.

77. Mechanized Painting
Data on automatic spray painting machines that can paint products of practically any size or shape. The DeVilbiss Co., Toledo 1, Ohio.

78. Copper Anodes
Information on the advantages of using OFHC Copper Anodes. Metal Sales Dept., American Metal Co., Ltd., 61 Broadway, New York 6, N. Y.

79. Cleaning Chemicals
Data on the use of Dow sodium orthosilicate and caustic soda for alkaline cleaning of metals. Dow Chemical Co., Dept. AL 608L-1, Midland, Mich.

80. Degreasers
Literature describes degreasers ranging in size from bench- and barrel-type units to large, permanent, high-capacity degreasers. Armstrong & White, Cheswick, Pa.

81. Felt Polishing Wheels
Data on applications and advantages of using Paramount felt wheels and bobs. Bacon Felt Co., 447 W. Water St., Taunton, Mass.

82. Water Wash Spray Booths
Photographs, descriptions, discussion of advantages: water wash spray booths. Bulletin DUE. Binks Mfg. Co., 3118-40 Carroll Ave., Chicago 12, Ill.

83. Faster Buffing
Information on how to improve buffing with patented spoke-mounted buffs. Guaranteed Buff Co., Inc., 20 Vandam St., New York 13, N. Y.

84. Better Anode Corrosion
Data on the Harshaw Anocap, a rubber electrode assembly that can be slipped over the anode hook and down over the anode top to allow additional metal to be corroded from each anode. Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

85. Polishing Machines
Information on conveyorized polishing machines: tandem roll horizontals; single-roll horizontals; and verticals. Central Machine Works, 72 Commercial St., Worcester 8, Mass.

86. Metal Cleaning and Treating
Information on metal cleaning and treating equipment. Cincinnati Cleaning & Finishing Machinery Co., 2008 Hageman St., Cincinnati 41, Ohio.

87. Chromic Acid
Information on Diamond Chromic Acid. Diamond Alkali Co., 300 Union Commerce Bldg., Cleveland 14, Ohio.

88. Protect Plated Surfaces
Catalog tells how Laqua, a material that can be applied by dip or spray, protects chemically cleaned or plated surfaces, eliminates the drying operation after plating. Free sample available. Fidelity Chemical Products Corp., 472 Frelinghuysen Ave., Newark 12, N. J.

89. Protect Buffing Fixtures
Information folder tells how buffing fixtures can be protected from wear and abrasion by the Fusecoating process. Fusion Metal Coating Co., 25493 W. Eight Mile Rd., Detroit 19, Mich.

90. Stripping Metals
"Enstrips" booklet tells how to dissolve one metal from another, chemically, without disturbing the base metal. For nickel, copper, chromium, zinc, cadmium, silver. Enthone, Inc., 442 Elm St., New Haven 11, Conn.

91. Roller Coating
Fact file on the Gasway Rollacoating Process. Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill.

92. Phosphatizing
A detailed phosphatizing folder, covering the entire Turcoat line of phosphatizing and metal protective coating materials. Turco Products, Inc., 6135 S. Central Ave., Los Angeles 1, Calif.

93. Cleaning Castings
Information on the new Spin-N-Spray washer, especially built to remove metal chips and dirt from inner recesses of castings, Industrial Systems Co., Dept. CH, Matawan, N. J.

94. Brass Additive
Information on a brass additive that is said to increase efficiency and throwing power; produce brighter plating; allow use of higher current density; eliminate cyanide and ammonia fumes; and retard anode polarization. Jelco Finishing Equipment Corp., 153 E. 26th St., New York 10, N. Y.

95. Wood Tanks
Data on wood tanks of any size or capacity. Kalamazoo Tank & Silo Co., 1571 Harrison St., Kalamazoo, Mich.

96. Metal Stripper
Data sheet tells how to strip metal coatings from stainless steel and aluminum with Metex Metal Stripper SS. MacDermid, Inc., Waterbury 20, Conn.

97. Plastisol Coatings
Information on the use of plastisol coatings for materials handling, tumbling barrel linings, plating rack insulation, electrical insulation and other applications. Marathon Metal Products, Inc., 67 Huntington St., Cortland, N. Y.

98. Rustproofing
How to improve corrosion resistance, with the Metabond process. International Rustproof Corp., 1575 Merwin Ave., Cleveland 13, Ohio.

99. Quartz Immersion Heater
Bulletin describes and illustrates various types and sizes of Glo-Quartz immersion heaters, used for heating corrosive solutions. Glo-Quartz Electric Heater Co., Inc., Willoughby, Ohio.

100. Barrel Finishing Equipment
A 20-page catalog contains information on Globe Barrel finishing equipment. Globe Div., Casalbi Co., 546 Wayne St., Jackson, Mich.

101. Extrusion Finisher
Data on the Hammond Reversing Extrusion Finisher, designed for high-volume buffing of extrusions, trim and mouldings. Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

102. Spray Booth Filters
Information on reclaiming paint overspray with the aid of Delpark waterwash spray booth filters. Industrial Filtration Co., 166 Industrial Ave., Lebanon, Ind.

103. Phosphatizing Process
Information on the Metacote process, which is said to clean, phosphatize and rustproof in the same operation. Metasurf Corp., 12830 Eaton Ave., Detroit 27, Mich.

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104. Vapor Degreasers
A 32-page manual on vapor degreasing gives valuable technical information, describes and illustrates equipment for solvent-vapor degreasing. Circo Equipment Co., 51 Terminal Ave., Clark (Rahway), N. J.

105. Surface Finishing Machines
Literature describes a line of surface finishing machines. Clair Manufacturing Co., Inc., Olean, N. Y.

106. Quartz Ovens
Clepco Quartz Paint Ovens use quartz heating elements, which are designed to emit that part of the spectrum most readily absorbed by paints. The Cleveland Process Co., 1965 E. 57th St., Cleveland 3, Ohio.

107. Pearlescent Finishes
How to produce pearlescent finishes, using Nacromer in a clear lacquer that is sprayed over coatings of any color. Mearl Corp., Waverly Pl., New York 14, N. Y.

108. Tumbling Machinery
Catalog shows several sizes of variable-speed tumbling barrels. Henderson Bros. Co., 134 S. Leonard St., Waterbury, Conn.

109. Truck-Type Oven
Bulletin No. 126 describes truck-type baking oven, a heavy-duty oven capable of processing large quantities of work at temperatures up to 500 deg. F. W. S. Rockwell Co., 2907 Eliot St., Fairfield, Conn.

110. Degreasers
Folder describes laboratory, two-dip, three-dip, vapor-spray, barrel-type, automatic, semi-automatic and special degreasing equipment. Mechanical Process Co., Inc., 392 Valley St., South Orange, N. J.

111. Silk Screen Supplies
Data on a complete line of silk screens and inks. Dept. P-6, The Naz-Dar Co., 461 Milwaukee Ave., Chicago 10, Ill.

112. Phosphatizing Large Equipment
Bulletin 55-137 tells how to phosphatize cabinets, trucks, trailers, busses, air conditioners and large, bulky equipment without using tanks. Neilson Chemical Co., 6561 Benson St., Detroit 7, Mich.

113. Harder Finishes
Information on the properties of isophthalic-based finishes. Oronite Chemical Co., 200 Bush St., San Francisco 20, Calif.

114. Disposable Paint Filters
Information on RP Paint Arrestors, used to filter air drawn out of spray booths. Research Products Corp., Dept. 38, Madison 10, Wisconsin.

115. Bias Buffs
Schaffner metal-center, air-cooled, bias-type buffs are said to run cooler, consume less compound. Schaffner Manufacturing Co., Inc., Emsworth, Pittsburgh 2, Pa.

116. Dip-Tank Paints
Data on finishes formulated for use in dip tanks. Sherwin-Williams Co., General Industrial Div., Cleveland 1, Ohio.

117. Barrel Finishing Media
Controlled grain size aluminum oxide bonded with specially formulated synthetic rubber aids in finishing precision parts. Speed-D-Burr Corp., 3613-c San Fernando Rd., Glendale 4, Calif.

118. Metal Cleaners
Information on a complete line of metal-cleaning chemicals. Metal Processing Dept. 429, Pennsalt Chemicals, 3 Penn Center, Philadelphia 2, Pa.

119. Pressure-Sensitive Tapes
A three-page brochure describes uses and applications for printed and die-cut pressure-sensitive tapes. Shows how die-cut tapes can be prepared in almost any size and shape to mask or protect odd-patterned surfaces, or any portion of a surface. Minnesota Mining and Manufacturing Co., 900 Fauquier St., St. Paul 6, Minn.

120. Paint Finishing Equipment
Bulletin 51C, 16 pages, describes ways to achieve better finishes, faster production and smoother handling of metal products. Despatch Oven Co., 619 S. E. Eighth St., Minneapolis 14, Minn.

121. Portable Polishing Machine
Literature describes Easy Dual-Action Sanders. Detroit Surfacing Machine Co., 1266 E. Eight Mile Rd., Detroit 20, Mich.

122. Bonderite
Data on the Bonderite process for preparing surfaces that are to be painted. Parker Rust Proof Co., 2172 E. Milwaukee Ave., Detroit 11, Mich.

123. Ovens
"Ovens for Industry" catalog describes complete line of industrial ovens. Kirk & Blum Mfg. Co., 3116 Forrer St., Cincinnati 9, Ohio.

124. Baking Ovens
Catalog describes complete line of paint-baking ovens. W. W. Sly Manufacturing Co., 4784 Train Ave., Cleveland 1, Ohio.

125. Air Sanders
Information on various types and sizes of air-operated portable sanding machines. Sundstrand Machine Tool Co., Pneumatic Div., Rockford, Ill.

126. Barrel Finishing Handbook
Newly revised handbook describes equipment, materials and methods used in modern barrel finishing. Norton Co., Worcester 6, Mass.

127. Immersion Heaters
Catalog 50 describes Chromalox Electric Immersion Heaters and other units designed to solve heating problems. Edwin L. Wiegand Co., 7522 Thomas Blvd., Pittsburgh 8, Pa.

128. Barrel Finishing Booklet
New booklet gives information on barrel finishing. Entitled "The Abbott Method of Barrel Finishing," it describes the new Abbott Welded steel barrel. Abbott Ball Co., 1064 New Britain Ave., Hartford 10, Conn.

129. Paint Stripper
Technical information on RAP stripping solvent, formulated to remove baked enamels and lacquers from conveyor hooks, rejected parts, etc. Pockrandt, Inc., 1108 Marquette St., Bay City, Mich.

130. Strippable Spray Booth Coating
Catalog describes Klem-Film, a vinyl plastic strippable protective coating that can be sprayed on spray booth walls and stripped off when overspray accumulates. Klem Chemicals, Inc., 14401 Lanson Ave., Dearborn, Mich.

Classified Advertising

Services—Position Opportunities—Used Machinery and Equipment. For rates and other information address: **PRODUCTS FINISHING, 431 Main St., Cincinnati 2, Ohio**

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SITUATION OPEN—Chemist for Plating Laboratory in large finishing Company, Newark, New Jersey. Experience in analysis and control. Reply submitting full resume of experience. Box No. 53, c/o Products Finishing, 431 Main Street, Cincinnati 2, Ohio.

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SALES REPRESENTATIVE WANTED

to sell complete line of metal finishing compounds, Alkaline cleaners, buffing compounds, solvents, plating solutions, additives and finishes in Eastern Massachusetts. Experience in industrial chemical or plating field required. Long established Chemical Manufacturer and Distributor. Excellent benefits including car. Send resume to Box 387, Avon, Connecticut.

METAL CLEANER SALESMAN

Experienced men needed for Bronx, Queens and Brooklyn territories. Our line includes metal cleaners, paint strippers, and other specialties in the metal processing field. Draw against high commission. Our men know of this ad. Write Box No. 54, c/o PRODUCTS FINISHING, 431 Main Street, Cincinnati 2, Ohio.

The Finishing Touch **By J. A. Patterson**

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Why buy BLACOSOLV® DEGREASING SOLVENT

MOST IMITATED SOLVENT

A growing number of imitators is testimony to the superiority of BLACOSOLV. The recognized stability, versatility and economy of BLACOSOLV degreasing solvent is the result of continuing research and development.

FIRST SOLVENT WITH NEUTRAL STABILIZERS

Constant research has put BLACOSOLV at the top. It is unsurpassed in acid acceptancy—resistance to light and heat and gives the most thorough job of cleaning any metals or alloys without staining or corrosive action.

Since BLACOSOLV was first introduced over 25 years ago, purchasers have received regular routine check service by BLAKESLEE experts trained in proper use and applications of degreaser and metal cleaning machines.

TAKE ADVANTAGE OF ENGINEERING TRAINED FIELD MEN

If you are not using BLACOSOLV, it will pay you to have a BLAKESLEE representative call on you.

When a better solvent can be made it will still be BLACOSOLV.

G. S. BLAKESLEE & CO. 1844 S. Laramie Ave., Chicago 50, Ill.
NEW YORK • LOS ANGELES • TORONTO
also Manufacturers of Blakeslee Metal Washing and Surface Treatment Machines

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"I tell you, Art, I never saw anything like it. They're soaking baskets of parts in a cleaner to remove some oil and dirt, and there's a thick film of oil floating right on top of the cleaning bath. And here's this guy pulling the baskets of parts out of the bath—right through the oil film—and picking up as much dirt and oil as they went in with. You should have seen the expression on Marty's face when I told him he wasn't cleaning the parts, he was re-oiling them!"

"Brother, if there ever was a natural for Metex T-103, this is it. What a chance to hammer home the point that you can cut costs and rejects . . . and improve the product finish . . . when parts are really clean before plating."

"I got that all in, don't worry. And I mentioned how T-103 completely emulsifies oil soils . . . how fast it is in softening heavy grease deposits."

"How about T-103 in their barrel plating line?"

"Well, they have some lucite cylinders, so naturally they're interested in my point that T-103 operates well at temperatures as low as 150°F. And they've been having some trouble with cylinder perforations clogging, so I showed them how they can prevent clogging and increase plating efficiency with T-103."

"Think they're sold on T-103?"

"When we can give them a cleaner that does a better job . . . and does it faster and more efficiently than the stuff they're using . . . how can they *not* be sold?"

"You aren't cleaning those parts—you're re-oiling them!"

You'll be sold on Metex T-103, too, once you get all the technical facts. Let a Mac Dermid representative put his know-how and experience to work helping solve your cleaning, plating and finishing problems.

MacDermid

...right to the Finish!

COMPLETE SUPPLIERS TO THE METAL FINISHING INDUSTRY

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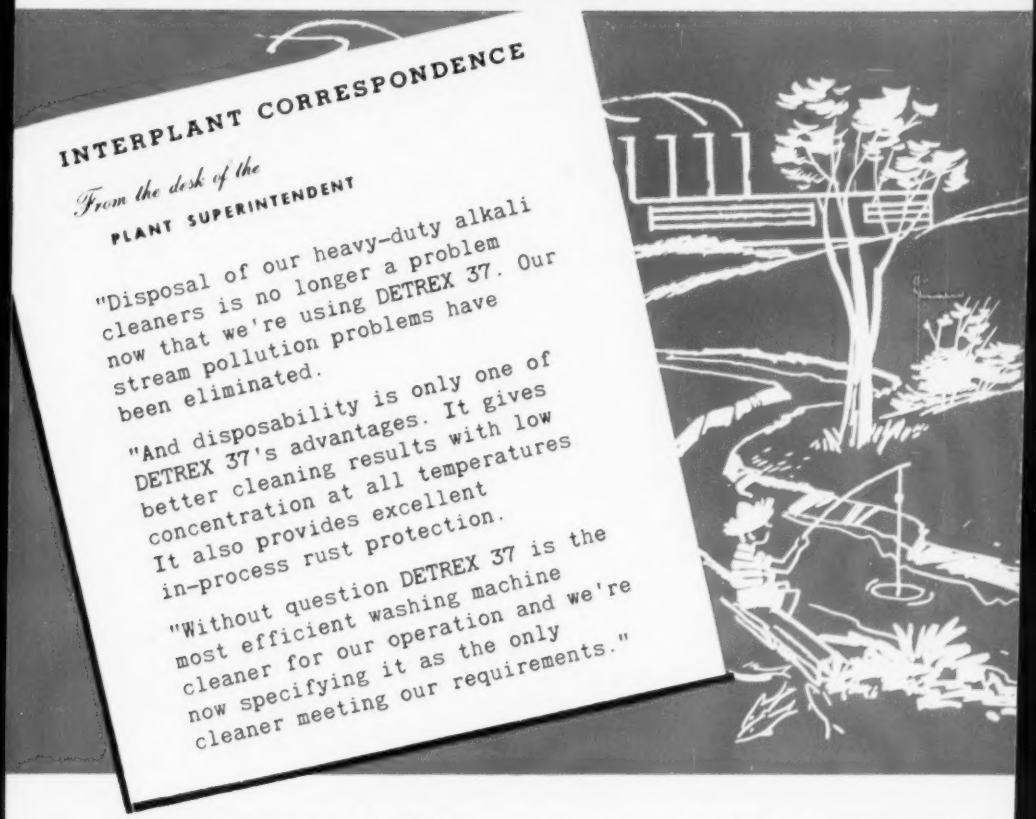
MEMO TO MANAGEMENT


INTERPLANT CORRESPONDENCE
From the desk of the
PLANT SUPERINTENDENT
"Disposal of our heavy-duty alkali cleaners is no longer a problem now that we're using DETREX 37. Our stream pollution problems have been eliminated.
"And disposability is only one of DETREX 37's advantages. It gives better cleaning results with low concentration at all temperatures It also provides excellent in-process rust protection.
"Without question DETREX 37 is the most efficient washing machine cleaner for our operation and we're now specifying it as the only cleaner meeting our requirements."

ALL-PURPOSE DETREX ALKALI CLEANERS MAKE CLEANING OPERATIONS ECONOMICAL AND EFFICIENT

In addition to DETREX 37, DETREX manufacturers a metal cleaning compound to meet every requirement in this field. Without obligation, a DETREX representative will analyze your specific cleaning application. Drawing from his experience and the wide range of DETREX water-soluble metal cleaning compounds, he can then recommend the one that will guarantee maximum efficiency in your metal cleaning operation.

DETREX service continues beyond the initial sale with regular checks on product performance and efficiency. Only DETREX provides such complete coverage — from recommendation of the proper method through installation to periodic counsel and service.

This "One-Source" efficiency has made DETREX, pioneer in the metal cleaning and processing field, the recognized leader. Let us show you how DETREX can recommend and service the most efficient methods, materials and machines to meet your requirements. Write today for information on increasing efficiency at lower cost.

DETREX CHEMICAL INDUSTRIES, INC.

BOX 501-A, DETROIT 32, MICHIGAN

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